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INFECTIOUS HEPATITIS: A REVIEW OF 200 CASES

CHARLES L. HOAGLAND, M.D.
and
LIEUTENANT COMMANDER ROBERT E. SHANK (MC), U.S.N.R.
New York

There have been few wars during the past century in which infectious hepatitis, or "epidemic jaundice," as it is frequently called, has not been responsible for a significant portion of the total noncombatant illness. With the possible exception of the War for Independence, jaundice has appeared in every campaign in which the armed forces of the United States have participated.[1] During the present war epidemic hepatitis has been a grave military problem, and although the total number of cases among all the military forces of the world will be revealed only at some later date, there is sufficient evidence from published reports to indicate that it is one of the most important noncombatant illnesses among troops of all branches of military service.[2] Outbreaks of jaundice are, moreover, not limited to members of the fighting forces. It has been commonly encountered in sporadic and endemic form in civilian communities for many decades. Camps, boarding schools, orphanages and other eleemosynary institutions have been particularly favorable sites for outbreaks of infectious hepatitis. In several instances the disease has reached epidemic proportions in the community surrounding the institution where the initial cases occurred. During the winter of 1921-1922 the State of New York was visited over a very wide area by so-called infectious jaundice, with one report alone recording over 700 cases.[3]

MATERIAL

The present report is concerned with a partial analysis of the results of clinical and metabolic studies and of the effects of various forms of treatment on 200 patients with infectious hepatitis admitted to the Rockefeller Institute Hospital between July 3, 1944 and April 1, 1945. Except for 2 civilians, the patients were commissioned officers and enlisted personnel from the Second, Third, Fourth and Fifth Naval Districts. Data on age and sex distribution in these cases are shown in table 1. The purpose of the study was threefold: (1) to define, as far as biochemical and metabolic technics for the evaluation of hepatic function permit, the extent to which the liver is damaged in the average nonfatal case of infectious hepatitis; (2) to ascertain to what extent the damage is repaired, and the length of time required for complete or maximal recovery of hepatic function, and (3) to assess the effect of various therapeutic measures, currently held to be of value in hastening regeneration following damage to the liver, on the length of time required for recovery of normal hepatic function.

CLINICAL MANIFESTATIONS OF INFECTIOUS HEPATITIS

Qualitatively, the clinical features of the patients with infectious hepatitis described in this study have been remarkably constant, with, however, differences in the severity of symptoms, ranging all the way from slight malaise in some to a state of toxemia in exceptional cases not unlike that seen in acute yellow atrophy. In approximately 85 per cent of patients a prodromal period lasting from one to nine days has preceded the appearance of jaundice; in a few it has been ten to fifteen days and in rare cases twenty to twenty-five days (table 2). Approximately 10 per cent of the patients complained of jaundice as the initial symptom. A number of patients, approximately 5 per cent, claimed that they did not have subjective symptoms either in the preicteric phase of the disease or thereafter. In these cases medical help had been sought because of the development of icterus. In most patients, however, a well defined preicteric stage was characterized by lassitude and fatigue, nausea and almost complete anorexia. An initial elevation of temperature, between 100 and 103 F., has occurred in approximately one half of the cases. In most instances the appearance of jaundice coincided with the end of the initial symptoms and the beginning of convalescence.

The degree of icterus varied greatly, from a local condition limited principally to the periphery of the scleras to one of intense, generalized yellow-bronze pigmentation involving the scleras, the whole skin and the mucous membranes. Undoubtedly a few of the cases with only slight icterus would have escaped clinical detection had it not been for associated signs of liver disease, including anorexia, nausea and hepatomegaly with tenderness. Although nausea was common, vomiting was infrequent. Headache was a presenting sign in approximately one third of the cases (table 3).

From the Hospital of the Rockefeller Institute for Medical Research.
The authors are members of the U. S. Navy Research Unit at the spital of the Rockefeller Institute for Medical Research.
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[1] Blumer, G.: Infectious Jaundice in the United States, J. A. M. A. :353 (Aug. 4) 1923.

[2] Stowman, K.: The Epidemic Outlook in Europe, J. A. M. A. 8:185 (May 19) 1945. Office of Surgeon General, Circular Letter . 95: The Outbreak of Jaundice in the Army, J. A. M. A. **120**: 51 5) 1942

[3] Williams, H.: Epidemic Jaundice in New York State, 1921-1922, A. M. A. **80**: 532 (Feb. 24) 1923.

Abdominal discomfort, amounting to frank pain in the exceptional case, was common. Frequently there were complaints of epigastric pain and only rarely of pain in the upper right quadrant. Liver enlargement was present on admission in 51 per cent of the patients, with hepatic tenderness in 38 per cent (table 4). Most patients presented some degree of hepatic tenderness and hepatomegaly at some time during the course of the disease. Enlargement of the spleen occurred in 10 per cent of the cases. Bradycardia of variable degree was present at some stage of the disease in many of the patients showing moderate to severe icterus. Pruritus of all degrees of severity occurred in 46 per cent of cases. The appearance of bile in the urine was observed by the patient in nearly every instance within a period of one to three days before the appearance of jaundice in the scleras. Less frequently the patient had also noted light or clay colored stools during this period.

Table 1.—*Age and Sex Distribution in 200 Cases of Infectious Hepatitis*

Age in Years	Sex		Number of Cases	Per Cent of Cases
	Male	Female		
16 - 20	59	0	59	29.5
21 - 25	70	4	74	37.0
26 - 30	27	2	29	14.5
31 - 35	23	1	24	12.0
36 - 40	12	0	12	6.0
41 - 45	1	0	1	0.5
46 - 50	1	0	1	0.5
Total	193	7	200	100.0

Frank recrudescence of the disease, a state recognized by deterioration of the patient's condition during recovery and leading to a return of clinical symptoms, was recognized in 6 cases. In a larger number of cases, however, amounting to approximately 15 per cent of the group, there were periods when liver function tests revealed values which were more abnormal than those previously observed. These periods may have represented adverse phases of the disease which were not sufficiently well defined to be reflected in a return of clinical symptoms. A history of previous episodes of acute infectious hepatitis was given by 5 patients, among whom 1 recalled three separate attacks during the preceding ten years. A history of recent contact with other cases of infectious hepatitis was given frequently.

DIFFERENTIAL DIAGNOSIS

In most cases the differential diagnosis of infectious hepatitis presented little or no difficulty. The sudden onset of a train of symptoms, largely referable to the liver and digestive tract, in a group of young men previously in excellent health, resulted in a clinical picture hard to confuse with other diseases. This was especially true in patients from regions in which the incidence of hepatitis had been relatively high, with the result that the physicians in these areas were sensitized to its occurrence. Nevertheless erroneous tentative diagnoses were common, and in some cases the referring diagnosis had to be changed entirely, owing to the appearance of new clinical phenomena during the course of the patient's illness. The most common mistakes in diagnosis were made in the preicteric phase of the disease and consisted in confusion of hepatitis with upper respiratory infections, atypical pneumonia and infectious mononucleosis. Weil's disease, amebic hepatitis, malarial hepatitis, hemolytic jaundice and obstructive lesions of the biliary tract were occasionally ventured as alternative diagnoses in a few cases after the appearance of jaundice. The relatively high incidence of hepatitis in endemic areas from which the patients were chiefly supplied, the relative infrequency of obstructive lesions of the biliary tract in men of military age and the fact that the patients came from a group of individuals previously selected for military service on the basis of freedom from chronic ill health and physical disability combined to offer favorable circumstances for correct clinical diagnosis.

TESTS OF HEPATIC FUNCTION

It is generally accepted that no single test of hepatic function has been devised which gives an adequate index of the physiologic condition of the liver. Little consideration, however, has been given to a study of the kind and minimal number of hepatic function tests which should be performed in order to give maximal information necessary for the intelligent clinical care of patients with various types of hepatic insufficiency.

Data on weekly determinations of several tests of metabolism and liver function, covering the clinical stages of hepatitis from acute onset to the end of convalescence, were obtained in each of the cases reported in this series. Determinations on the plasma included albumin, globulin, fibrinogen, prothrombin time, alkaline phosphatase, free and esterified cholesterol, phospholipid, total lipid, vitamin A, sulfobromophthalein retention and bilirubin. Weekly cephalin flocculation tests were made on the serums. A complete analysis of data secured from multiple serial tests of liver function in infectious hepatitis will appear in a subsequent report.

Except in the infrequent case presenting signs of chronic liver disease, all abnormal values for the various constituents of the blood in patients with infectious hepatitis returned to normal within the period of time covered by hospitalization. The average rate at which values for an individual test of liver function returned to normal appeared to bear a very definite relation to the rate at which values for other tests fell within the normal range. Notwithstanding the fact that the tests were chosen in a manner calculated to cover the greatest possible diversity of function, there was a surprising correlation in the degrees of alteration shown by the results of the various tests at any time during the course of the disease in any given case. There was likewise a remarkably close agreement in general between the results of any given series of tests and the clinical impression gained by a study of the patient at the time the tests were performed. Data on the correlation of the results of the various tests of liver function with respect to one another and with the clinical course of the disease have been compiled in table 5. Multiple tests of liver function appeared to have their greatest usefulness in

Table 2.—*Interval Between Onset of Symptoms and Appearance of Jaundice in 200 Cases of Infectious Hepatitis*

Interval in Days	Number of Cases	Per Cent of Cases
0 - 4	80	40.0
5 - 9	92	46.0
10 - 14	18	9.0
15 - 19	5	2.5
20 - 24	4	2.0
25 - 29	0	0.0
30 - 34	1	0.5
	200	100

the late stages of convalescence when it was no longer certain from the clinical condition of the patient whether the activity of the disease process had subsided. At this stage in the disease the greatest degree of dissociation among the results of the various tests of liver function was encountered. In approximately 10 per cent of the cases clinical convalescence appeared to be complete two to three weeks, and sometimes longer, before the results of certain liver function tests (notably the retention of sulfobromophthalein and the ratio of free to total cholesterol) had fallen within the accepted range of normal.

Table 3.—*Symptoms Occurring in the Preicteric Phase in 200 Patients with Infectious Hepatitis*

Symptoms	Number of Cases	Per Cent of Cases
General symptoms		
Lassitude and fatigue	137	68.5
Pruritus	93	46.5
Fever	83	41.5
Headache	53	26.5
Chills	34	17.0
Upper respiratory infection	31	15.5
Muscle and joint pains	24	12.0
Syncope	16	8.0
Epistaxis	9	4.5
Cough	8	4.0
Urticaria	6	3.0
Symptoms referable to disease of the liver or gastrointestinal tract		
Anorexia	184	92.0
Urine dark	181	90.5
Nausea	158	79.0
Vomiting	117	58.5
Abdominal pain	114	57.0
Acholic stools	109	54.5
Constipation	45	22.5
Diarrhea	19	9.5
No preicteric symptoms	15	7.5

Deviation from the normal values for percentage retention of sulfobromophthalein paralleled in general the deviation from the normal of simultaneous values obtained for plasma bilirubin. When clinical jaundice was evident, the use of both tests gave little information which would not have been revealed by either alone. However, in the incipient stages of the disease, and in the late stage of convalescence, when the bilirubin concentration in the plasma was normal or nearly so, the sulfobromophthalein retention proved to be much more sensitive than the test for bilirubin. It was particularly helpful in indicating the presence of latent hepatic insufficiency. Since clinical signs of the disease were often minimal or absent in this phase of the disease, it is evident that a considerable number of patients would have been discharged before they had regained complete recovery of liver function had the sulfobromophthalein tests not been performed and a normal value required before the patient was permitted to return to active duty.

The level of vitamin A in the plasma was in the low range of normal or diminished in every case, and in general this diminution was proportional to the clinical severity of the disease. The vitamin A content of the plasma began to rise early in convalescence and was always well within the normal range by the time convalescence was established. Several factors are probably at work in the production of lowered values for vitamin A in the plasma during the acute stages of infectious hepatitis: (1) lowered intake and faulty absorption of the vitamin, due respectively to anorexia and to deviation of the bile salts from the intestinal tract; (2) decreased storage capacity of the diseased liver for vitamin A, with consequent dependence of the height of the plasma level on the amount and rate of ingestion of the vitamin. Moreover, it is likely that in febrile diseases in which the plasma vitamin A is low, as in rheumatic fever and pneumonia, there occurs a more rapid rate of utilization or destruction of the vitamin than in the normal subject.[4]

The plasma prothrombin time was increased only in those cases of infectious hepatitis presenting severe symptoms and evidence of extensive destruction of the hepatic parenchyma as revealed by other tests of liver function. In most patients having an increased prothrombin time, the parenteral administration of menadione resulted in prompt return of the values to the normal range.

The total protein, albumin and globulin of plasma were determined at weekly intervals on 150 patients with acute infectious hepatitis. The acute phase of the disease was found in some patients to be accompanied by a decrease in the total protein, an increase in globulin and a decrease in the albumin fraction. During convalescence these changes were reversed, and on clinical recovery the ratio of albumin/globulin was well within the normal range. Twenty-one per cent of the 150 patients had levels of plasma protein less than 6 Gm. per hundred cubic centimeters at some time during the acute phase of the disease. At this time the concentration of plasma albumin was less than 4 Gm. per hundred cubic centimeters in 44 per cent of the patients, while plasma globulin greater than 3 Gm. per hundred cubic centimeters was observed in 16 per cent. In 40 per cent of patients acutely ill of hepatitis, the albumin/globulin ratio was less than 1.5.

Total lipid and phospholipid concentrations of the plasma were determined at weekly intervals during the entire course of the disease in more than 100 patients in order to learn to what extent aberrant fat metabolism, believed to occur in this disease, was reflected in altered plasma lipid concentration. During the acute stages no important changes were manifest. Within a few days after the onset of jaundice, however, elevation in the lipid and phospholipid concentrations of the plasma was found, occasionally reaching 200 per cent of the normal concentration of lipid and 300 per cent concentration of phospholipid; and usually this elevation persisted until the onset of convalescence, when there was a rapid restoration of the concentration of the lipids to normal levels.

Table 4.—*Common Physical Findings in 200 Patients with Infectious Hepatitis*

	Number of Cases	Per Cent of Cases
	102	51.0
	76	38.0
	27	13.5
of mercury)	38	19.0
Bradycardia (heart rate less than 60 per minute)	50	25.0
Acneform skin lesions	11	5.5
Furunculosis	3	1.5

Comparative values for the common tests of liver function employed in this study in a typical case of infectious hepatitis, of average duration and severity, are depicted in the accompanying chart.

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[4] Shank, R. E.; Coburn, A. F.; Moore, L. V., and Hoagland, C. L.: The Level of Vitamin A and Carotene in the Plasma of Rheumatic Subjects, J. Clin. Investigation 23: 289 (May) 1944.

CHANGES IN THE CELLULAR ELEMENTS OF THE BLOOD

The erythrocyte count in the majority of patients was maintained at a normal level throughout the course of the disease. A hyperchromic anemia of moderate degree, however, was encountered in those patients presenting unusually severe symptoms of hepatitis and in cases showing chronic damage to the liver persisting over periods of several months or more. The leukocyte count varied from 4,000 to 10,000 initially in the disease process. In some cases there was a moderate leukopenia early in the course of the disease. However, normal values for the leukocytes were recorded in all cases in the period of beginning convalescence. Lymphocytosis to an extent of 45 to 70 per cent of the total leukocyte count was noted frequently early in the disease. In most cases the erythrocyte sedimentation rate was normal or only slightly elevated during the first several days of the disease. It frequently increased to values of 25 to 50 mm. per hour during the period of convalescence, however, and gradually fell to normal limits late in the period of recovery.

Table 5.—*A Comparison of the Results of Selected Serial Tests of Liver Function in Patients with Infectious Hepatitis*

Tests of Liver Function	Normal Range of Tests	References	Total Number of Patients Tested	Number of Patients Showing Abnormal Values	Average Maximum Result in Tests During Illness	Average Time Required for Results of Tests to Fall in Normal Range, Days
Albumin/globulin ratio......	2.3-3.3 Gm.	Reiner, M.: Manual of Clinical Chemistry, Interscience Publishers, Inc., New York, 1941	159	149	1.6	52.2
Total protein................	6.5-8.0 Gm. per 100 cc.	Reiner, M.: Manual of Clinical Chemistry, Interscience Publishers, Inc., New York, 1941	159	92	6.24 Gm. per 100 cc.	40.5
Alkaline phosphatase........	1.5-8 (King-Armstrong units)	Binkley, F.; Shank, R. E., and Hoagland, C. L.: Modification of the King-Armstrong Method for Determination of Phosphatase, J. Biol. Chem. **156**: 253 (Nov.) 1944	120	49	11.4 units	36.9
Bilirubin....................	0.2-0.5 mg. per 100 cc.	Van den Bergh, A. A. H.: La récherche de la bilirubine dans le plasma sanguin par la méthode de la réaction diazoique, Presse méd. **29**: 441 (June 4) 1921. Malloy, H. T., and Evelyn, K. A.: The Determination of Bilirubin with the Photoelectric Colorimeter, J. Biol. Chem. **119**: 481 (July) 1937	163	157	6.7 mg. per 100 cc.	73.0
Sulfobromophthalein retention	0.0-5 mg. per 100 cc., 45 min.	Rosenthal, S. M., and White, E. C.: Clinical Application of the Bromsulfalein Test for Hepatic Function, J. A. M. A. **84**: 1112 (April 11) 1925. Hoagland, C. L., and Shank, R. E.: Unpublished data	163	142	32.1 mg. per 100 cc.	54.4
Cephalin flocculation........	0-+	Hanger, F. M.: The Flocculation of Cephalin-cholesteral Emulsions by Pathological Sera, Tr. A. Am. Physicians, **53**: 148, 1938. Hanger, F. M., and Patek, A. J.: The Cephalin Flocculation Test in Cirrhosis of the Liver, Am. J. M. Sc. **202**: 48 (July) 1941	125	115	+++	49.5
Cholesterol ratio, free/total	0.20-0.30	Schoenheimer, R., and Sperry, W. M.: A Micromethod for the Determination of Free and Combined Cholesterol, J. Biol. Chem. **106**: 745 (Sept.) 1931	163	140	0.53	70.0
Erythrocyte sedimentation rate	2-15 mm./hr.	Hoagland, C. L., and Shank, R. E.: Unpublished data	163	98	29.8	55.0
Phospholipid................	130-330 mg. per 100 cc.	Kuttner, T., and Lichtenstein, L.: Microcolorimetric Studies. III. Estimation of Organically Bound Phosphorus. A system of analysis of phosphorus compounds in blood, J. Biol. Chem. **95**: 661 (March) 1932	100	26	499 mg. per 100 cc.	37.2
Total lipid..................	570-820 mg. per 100 cc.	Bloor, W. R.: The Determination of Small Amounts of Lipid in Blood Plasma, J. Biol. Chem. **77**: 53 (April) 1928	99	52	940 mg. per 100 cc.	42.1
Vitamin A...................	30-40 microgm. per 100 cc.	Murrill, W. A.; Horton, P. B.; Lieberman, E., and Newburgh, L. H.: Vitamin A and Carotene. II. Vitamin A and Carotene Metabolism in Diabetics and Normals, J. Clin. Investigation **20**: 395 (July) 1941	119	93	26.6 microgm. per 100 cc.	41.6

THE CARDIOVASCULAR AND AUTONOMIC NERVOUS SYSTEMS IN INFECTIOUS HEPATITIS

Bradycardia of some degree occurred in 25 per cent of the patients with infectious hepatitis and in general was confined to those cases manifesting moderate to severe clinical symptoms of the disease. In some cases it persisted throughout the period of convalescence. Search was made in each case of infectious hepatitis for other symptoms referable to the autonomic nervous system. Hypotension, with systolic pressures below 110 mm. of mercury, was of frequent occurrence. Sinus irregularity of the heart occurred frequently, both with and without bradycardia. In these cases electrocardiographic tracings frequently revealed changes in the site of origin of the atrioventricular impulse. Partial heart block, as revealed by lengthening of the PR interval, occurred occasionally in a few patients. In these cases abolition of the partial block could be achieved by the parenteral administration of atropine. The effect of atropine was temporary, however, and in some patients little or no effect was observed. Symptoms which could be definitely attributed to pylorospasm were elicited in only 2 cases. Intestinal hyperperistalsis as such was not recognized, but in most of the severe cases repeated reference was made to vague abdominal pain during acute and convalescent stages alike.

The fact that bradycardia and in some instances prolongation of the PR interval could be abolished by atropine favors the hypothesis that vagal stimulation due to some unexplained process was at work in the production of the cardiovascular phenomenon.[5] Against this hypothesis, however, is the fact that in several cases no detectable changes in the delayed PR interval occurred following atropine in spite of the fact that sufficient drug was given to produce a moderate tachycardia. Moreover, by reference to table 6 it will be observed that no relationship could be demonstrated between the heart rate and the length of the PR interval. If the prolongation of the PR interval was due solely to vagotonia, an accompanying bradycardia would have been expected.

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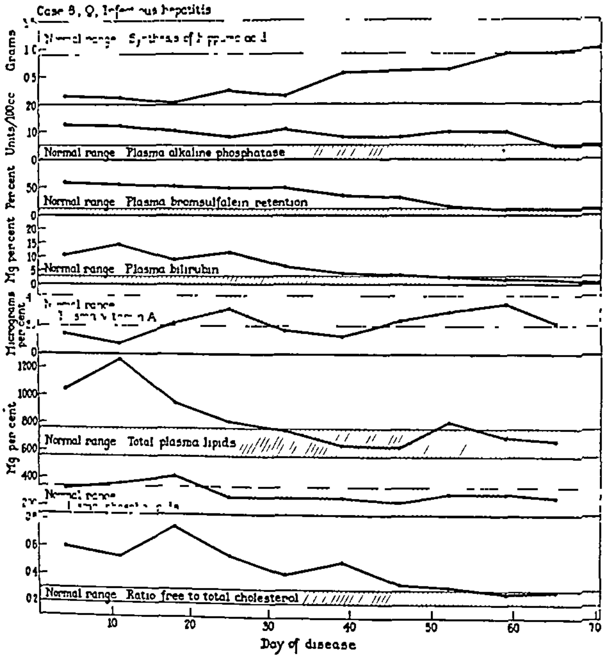
[5] Hewlett, A. W.: Pathological Physiology of Internal Diseases, revised edition, New York, D. Appleton & Co., 1928.

SPECIFIC THERAPY IN INFECTIOUS HEPATITIS

Except in the occasional case in which the syndrome becomes chronic, infectious hepatitis is apparently a self-limited disease.[6] Until more specific information is at hand concerning the metabolic aberrations in this disease, it seemed wise to limit attempts at therapy to those measures which are believed on the basis of animal experimentation to hasten repair of the damaged liver. In the present series the following types of therapy have been tried; namely, the administration of methionine, choline and crude liver extract to three groups of selected patients respectively. A fourth group, to which isotonic solution of sodium chloride was given, constituted a control series. All four groups were maintained on diets containing on the average 150 Gm. of protein, 60 Gm. of fat and 400 Gm. of carbohydrate throughout the period of observation.

The rationale for the administration of methionine in the treatment of patients with liver disease is derived from results obtained in the prevention of chloroform injury to the liver in protein depleted dogs.[7] Claims have been made both for [8] and against [9] its efficacy in the treatment of infectious hepatitis. Only patients admitted early in the course of the disease were selected for trial with methionine. Other groups, strictly comparable with respect to time of onset of the disease before institution of therapy, were selected for treatment with saline solution, liver extract and choline. Strict rotation of patients among the four groups was observed throughout.



Comparative values for the common tests of liver function employed in this study in a typical case of infectious hepatitis of average duration and severity.

Table 6.—*Table Showing Lack of Correlation Between Heart Rate and Increase in PR Interval in Infectious Hepatitis*

Heart Rate	Total Number of Determinations	Number of Determinations with PR Interval 0 20 or Over	Per Cent
40 - 50	3	1	..
50 - 60	16	3	19
60 - 70	68	15	22
70 - 80	82	19	23
80 - 90	83	13	16
90 -100	47	11	23
100 -110	13	0	..

Sixteen patients comprise the group treated with methionine. Each patient received 5 Gm. of a racemic mixture of the amino acid in 200 cc. of isotonic solution of sodium chloride intravenously on admission and daily thereafter for ten days. The material was well tolerated and induced no adverse signs or symptoms. Although the group was fairly small, it appeared from objective clinical considerations, including a study of the average net change in weight, and from results of frequent tests of liver function, that the course of the disease was not perceptibly influenced by this form of treatment. Since the patients who received methionine were at the same time receiving diets moderately high in protein, the results do not permit a statement regarding the possible effectiveness of supplementary methionine in the presence of an inadequate protein intake (table 7).

Table 7.—*Comparison Respectively Between Effects of Methionine, Choline, Liver Extract and Saline Solution on the Average Period Required for Recovery in Patients with Infectious Hepatitis*

Medication	Number of Patients	Net Change in Weight in Hospital, Kg.	Average Duration of Illness, Days
Intravenous methionine	16	+2 9	53 5
Oral choline	29	+3 1	50.7
Intravenous crude liver extract	34	+3 5	48 9
Intravenous saline solution (control group)	31	+3 1	51 5

The use of choline in the treatment of acute hepatic insufficiency is based on a rationale somewhat similar to that proposed for methionine. Both compounds are lipotropic,[10] and in the normal animal methionine may be considered nutritionally equivalent to choline.[11] In view of the widely essential role of the liver in intermediary metabolism, it is not justified to assume in our present incomplete state of knowledge of liver processes that methionine is nutritionally equivalent to choline in hepatic insufficiency. It was deemed important, therefore, to give choline a separate trial in the treatment of infectious hepatitis in order to learn whether the syndrome would be favorably modified thereby.

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[6] Lucké, B: The Structure of the Liver After Recovery from Epidemic Hepatitis, Am. J. Path. **20:** 595 (May) 1944.

[7] Miller, L L; Ross, J. F., and Whipple, G. H · Methionine and Cystine, Specific Protein Factors Preventing Chloroform Liver Injury in Protein Depleted Dogs, Am. J. M. Sc. **200:** 739 (Dec) 1940.

[8] Beattie, J., and Marshall, J.: Methionine in the Treatment of Liver Damage, Nature **153:** 525 (April 29) 1944.

[9] Peters, R A; Thompson, R H. S.; King, A. J.; Williams, D. I, and Nicol, C S.: Sulphur-Containing Amino Acids and Jaundice, Nature **153:** 773 (June 24) 1944. Methionine in Infective Hepatitis, Military Intelligence Division, W. D. G. S, Military Attaché Report, Great Britain, July 18, 1944.

[10] Best, C H, and Lucas, C C: Choline Chemistry and Significance as a Dietary Factor, in Vitamins and Hormones, New York, Academic Press **1:** 1-58, 1943.

[11] duVigneaud, V; Cohn, M; Chandler, J P; Schenck, J. R., and Simmonds, S.: The Utilization of the Methyl Group of Methionine in the Biological Synthesis of Choline and Creatine, J. Biol. Chem. **140:** 625 (Aug) 1941.

Twenty-five patients comprise the group which received choline. Each patient received 5 Gm. of choline hydrochloride in divided doses on admission and daily thereafter for ten days. The material was well tolerated in each case. However, no effect was noted on the clinical course of the disease which could be attributed to choline therapy. An average duration of illness of 50.7 days for the group of patients treated with choline was not significantly different from that of 53.5 for methionine or 51.5 days for the control group receiving only saline solution. The average gain in weight during convalescence for the patients in this group was approximately the same as in the control group.

The rationale for the administration of crude liver extract to patients with infectious hepatitis is harder to assess. Its use in the treatment of this disease was prompted by promising results which we have obtained during the past three years following its administration intravenously in large amounts to patients with cirrhosis of the liver.[12] Thirty-four patients with infectious hepatitis were treated daily with a specially prepared aqueous extract of Cohn's fraction G of liver[13] in amounts of 10 cc., diluted to 50 cc. with saline solution and given intravenously over a period of ten days following admission of the patient to the hospital. Careful preliminary tests for sensitivity and toxicity were carried out in every case before the full dose of 10 cc. was given. The material was well tolerated, and no adverse effects were observed in any patient. The difference between an average period of 48.9 days for the patients receiving liver extract and 51.5 days for the alternate control group receiving only saline solution was not considered significant. No significant difference in average gain in weight was recorded for this group over the control group or over the groups treated with choline and methionine.

TABLE 8.—*Effect of a Regimen of Rest on the Duration of Convalescence in Infectious Hepatitis*

Interval Between Appearance of First Symptoms and Hospitalization, Days	Number of Patients in Group	Average Period in Hospital, Days	Average Duration of Illness, Days	Standard Error
1 - 14..........	108	37.1	46.3	1.9
15 - 29..........	62	30.8	51.1	1.9
30 and more....	19	31.8	80.8	9.0

In none of the foregoing groups is the number of patients particularly large. It should be kept in mind, however, that the groups were made up of men of nearly the same age, presenting approximately the same degree of severity of the disease, and all in nearly the same stage of hepatitis when therapy was begun. The patients, moreover, had been in excellent health prior to the onset of the disease and were entirely free from complications of any sort other than hepatitis. Smaller numbers in each group were required, therefore, to yield significant data than would have been the case had there been differentials in age and sex and variability in the previous states of health of the patients.

EFFECT OF HOSPITALIZATION AND REST ON LENGTH OF TIME REQUIRED FOR CONVALESCENCE IN INFECTIOUS HEPATITIS

In an effort to ascertain those factors in the clinical care of patients with infectious hepatitis which affect the duration of convalescence, study was made of the effect of hospitalization and rest and of activity on the clinical course of the disease. Whenever possible, patients were transferred promptly from outlying naval districts to the Rockefeller Hospital on the appearance of the first unequivocal signs of hepatitis. Here a rigid routine of bed rest and restricted activity was imposed until convalescence was well under way. Some activity was permitted when the clinical condition of the patients appeared to warrant it and was increased gradually until it was deemed safe to permit the patient to be up and about the ward ad libitum. When all objective signs of the disease had disappeared and there was no longer any laboratory evidence of hepatic dysfunction, the patient was permitted one to three hours of liberty from the hospital each afternoon, having first been warned against undue physical exertion and the consumption of food and alcohol. Each patient was further told that any infraction of these rules would result in prompt cancellation of the privilege of liberty and jeopardize the granting of a routine of ten days' experimental period of sick leave on convalescence. In most instances these rules of conduct were respected.

Although it is now generally conceded that the clinical course of infectious hepatitis is favorably modified by strict adherence on the part of the patient to a regimen of rest and relative inactivity,[14] it had not always been possible to enforce such restrictions before admission of the patient to our service. Many patients had become ill at sea under circumstances in which adequate hospitalization and clinical care were difficult or impossible to carry out; some patients had been sent to port hospitals for study and diagnosis, with consequent delay of several weeks before transfer to the Rockefeller Hospital could be carried out. In yet another group the diagnosis was sufficiently equivocal in the early stages of illness to result in a prolonged period of observation, with delay in transfer. It became of interest, therefore, to ascertain what the overall effect of these circumstances might have been on the duration of convalescence and the severity of the attack in the average case of infectious hepatitis. The following groups were recognized: 1. Patients admitted to the Rockefeller Hospital within a period of fourteen days following the onset of the first unequivocal symptoms of infectious hepatitis. 2. Patients admitted within a period of fourteen to twenty-eight days following the onset of symptoms. 3. Patients who for the reasons stated were not admitted to our service until thirty or more days after the onset of the first symptoms of hepatitis. No cases of chronic liver disease or of hepatitis with complications were included in any of the three groups. Since all cases of infectious hepatitis recognized as such were sent through a blanket order from outlying naval districts to the Rockefeller Hospital, it has been assumed that the factors contributing to delay in transfer of the patients to the hospital were chiefly those which have been outlined, namely delay in reaching port, difficulties in diagnosis, and so on. A few patients had been promptly and effectively hospitalized in the interval between the appearance of the first symptoms of the disease and transfer of the patient to this hospital. Most patients, however, had been permitted activity as desired as soon as the acute stages of the disease had passed.

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[12] Hoagland, C. L., in Conferences on Therapy: The Modern Treatment of Cirrhosis of the Liver and Hepatic Insufficiency, New York State J. Med. **43:** 1041 (June) 1943. Ralli, Elaine P.; Robson, J. S.; Clarke, Delphine, and Hoagland, C. L.: Factors Influencing Ascites in Patients with Cirrhosis of the Liver, J. Clin. Investigation **24:** 316 (May) 1945. Hoagland, C. L.: The Therapy of Liver Diseases, Bull. New York Acad. Med. **21:** 537 (Oct.) 1945.

[13] Jacobson, B. M., and Subbarow, Y.: Studies of the Principles in Liver Effective in Pernicious Anemia: VI. Recent Advances in the Purification of Active Substances, J. A. M. A. **116:** 367 (Feb. 1) 1941.

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Graphic presentation of the effect of prompt and delayed institution of a regimen of rest and relative inactivity on the duration of convalescence in infectious hepatitis is shown in table 8. A consideration of the standard error indicates a questionable difference between 46.3 days for the average duration of illness in group 1 and an average duration of 51.1 days in group 2. The difference, therefore, may or may not be significant. There is no doubt, however, of the significance of the difference in the periods of convalescence between groups 1 and 2 and of group 3, with an average duration of 80.8 days. Since the essential difference among the various groups with respect to this analysis resided solely in the number of days antedating the period of restriction of physical activity imposed at the Rockefeller Hospital, it would appear that a regimen of hospitalization and restriction of activity imposed as late as thirty days following the onset of hepatitis had appreciably shortened the period of convalescence.

RECRUDESCENCE OF INFECTIOUS HEPATITIS FOLLOWING A PERIOD OF SICK LEAVE

While recrudescence amounting to definite deterioration of the patient's clinical condition during the course of convalescence was fortunately rare, evidence obtained from a careful analysis of 200 cases during recovery from hepatitis indicates that a large number of the patients showed some evidence of a temporary recrudescence following a period of apparent clinical recovery. Of various tests of liver function which were repeated serially on these patients, the sulfobromophthalein retention test proved most helpful in enabling us to detect evidence of recurrent hepatitis in patients in whom there was apparent complete convalescence and who as a consequence were granted a test period of ten days' leave from the hospital. Evaluation of the hepatic status of each patient was carried out immediately on the patient's return, including tests of sulfobromophthalein retention, plasma bilirubin and cephalin flocculation. Of the total group 18.5 per cent showed an abnormal elevation in the sulfobromophthalein retention during the convalescent period after sulfobromophthalein retention and the bilirubin concentration had reached normal or approximately normal levels. Of these, 82 per cent showed this reversal directly following the onset of a ten day period of sick leave. All cases showed an eventual return of the sulfobromophthalein retention to the normal range. In nearly all cases additional evidence was found of hepatic dysfunction, consisting of enlargement of the liver, with tenderness in some, complaints of fatigue in others and in certain cases of anorexia and abdominal pain. In several patients the cephlin flocculation test was positive. In a few there was a measurable elevation of the bilirubin. The total period of convalescence for this group was considerably lengthened over the group in which there were no evidences of hepatic dysfunction following return from sick leave. The average additional period of time required for convalescence in the group showing recrudescence varied from three days to ten weeks, with an average period of twenty days.

The percentage of patients who may be expected to develop signs of chronic liver disease following convalescence from an acute attack of hepatitis is not known with certainty at the present time. The incidence has been said to be low.[6] However, objective criteria for residual damage were not met in many instances or patients followed for long enough periods of time to have warranted the judgment that they had fully recovered. Establishment of adequate criteria which will permit early recognition of residual damage to the liver following an attack of infectious hepatitis is one of the major problems waiting to tax the ingenuity of the postwar worker in the field of liver disease.

SUMMARY

Qualitatively the clinical features observed in 200 cases of infectious hepatitis were remarkably constant, consisting of an acute febrile prodromal period with an average of 6.2 days' duration before the onset of clinical icterus. Quantitatively, however, there were differences in the severity of symptoms ranging all the way from slight malaise in some patients to a state of toxemia in exceptional cases not unlike that seen in acute yellow atrophy.

In most cases the differential diagnosis presented little difficulty, particularly after the onset of icterus. In the preicteric stage of the disease, however, it was frequently confused with upper respiratory infections, atypical pneumonia and infectious mononucleosis.

Multiple tests of liver function were performed at weekly intervals on each patient. Of these the plasma bilirubin, the ratio of free to total cholesterol in the plasma and the plasma retention of sulfobromophthalein were the most useful and least subject to equivocation in interpretation. On the whole there was remarkably close agreement between the results of any given series of tests and the clinical impression gained by a study of the patient at the time the tests were performed. Multiple tests of liver function appeared to have their greatest usefulness in the late stages of recovery from hepatitis when it was no longer possible to ascertain clinically whether convalescence was complete. At this stage of the disease the greatest degree of dissociation among the results of the various tests was observed.

In three groups of patients receiving supplements of methionine, choline and crude liver extract, respectively, and a diet high in protein and carbohydrate and moderately low in fat, no evidence of an accelerated recovery was obtained over that of a control series receiving the diet alone.

Prompt hospitalization and relative freedom from activity appeared to be of paramount importance in speeding recovery from hepatitis.

While recrudescence amounting to well defined deterioration of the patient's clinical condition following beginning convalescence was rare, 18.5 per cent showed a mild to moderate recrudescence following a period of apparent clinical recovery. In 82 per cent of these cases the recrudescence occurred following a period of activity occasioned by a grant of liberty or temporary discharge from the hospital. All patients in this group showed an eventual relief of clinical symptoms and normal tests of hepatic function after an average period of twenty days' additional hospitalization.

MORPHOLOGIC CHANGES IN RED BLOOD CELL WITH IRON DEFICIENCY ANEMIA

STEVEN O. SCHWARTZ, M.D.
and
VLADIMIR C. FLOWERS, M.D.
Chicago

One of the most signal forward steps in the field of hematology is a recognition of the fact that the term "secondary anemia" must give way to a descriptive diagnosis which implies the etiologic component. Next to infection, iron deficiency is probably the most common cause of anemia. It is our purpose to point out certain characteristics of the blood as determined from the analysis of 628 cases of iron deficiency, in each of which bleeding, either alone or in combination with other factors, was responsible for the anemia. We have become particularly impressed with the progressive changes which take place in the red cells as the iron deficient state becomes more and more definite, and the correlation of these changes with the severity of iron deficiency and the degree of anemia. Another point of practical importance which became apparent as the study progressed was the independent rate of fall of hemoglobin and red cells, with the more important of these factors, the hemoglobin, receiving too little attention.

MATERIAL

The material in this report was based on a study of adult patients entering the Cook County Hospital. In each case known or occult bleeding was present, often complicated by inadequate intake of iron-containing foods. In no instance was dietary inadequacy alone responsible for the anemia. The sources of bleeding were the nose, esophageal varices, peptic ulcers, carcinoma of the stomach, cecum, rectum, bladder and uterus, uterine fibroids and other causes of menorrhagia and metrorrhagia, isolated cases of thrombocytopenic purpura and Osler's disease, and combinations of these factors. Deficient iron intake was due in many instances to ill advised ulcer regimens or the abstinence from meats because of real or purported hypertension. No case was included in the series in which the iron deficiency was unexplained or complicating factors, such as infections or metastases, were prominent. No peculiarities of pattern were demonstrable for the different sex, race or age groups.

METHODS

Red cell counts were done in the usual manner. Hemoglobin determinations were made with a photoelectric colorimeter so standardized that 15.6 Gm. equaled 100 per cent hemoglobin. The color index was obtained by dividing the percentage of hemoglobin by the percentage of red cells. Blood smears were prepared by a modification of the cover slip technic and stained with Wright's stain. Red cell abnormalities in the smears were correlated with the red cell count, hemoglobin and color index. All figures were subjected to statistical analysis for standard variation from the normal by the formula $\delta = \sqrt{\frac{\Sigma d^2}{n-1}}$. No values were found subject to elimination. The T value $\left(\frac{m^1 - m^2}{\sqrt{\frac{\delta_1^2}{n_1} + \frac{\delta_2^2}{n_2}}}\right)$ was in all instances in excess of 5.

COMMENT

Lemery and Geoffy (1713) were the first to demonstrate iron in blood ash, and Menghini (1746) is credited with the discovery that this iron can be increased by increasing the feeding of iron-containing foods Sydenham (1681) introduced iron into clinical medicine for the treatment of anemia, while Blaud (1831) emphasized the specific action of iron in chlorosis and recognized that iron preparations restored the coloring matter to the blood. Reduction of iron in the blood of chlorotics was first reported in 1832 by Fodisch, while Andral (1842) showed that iron therapy caused an increase in the red cell count in this disease.[1]

The characteristics of the red cells which accompany iron deficiency are so well known as to require only enumeration. These are microcytosis, hypochromia, poikilocytosis, low mean corpuscular volume, low mean corpuscular hemoglobin and low mean corpuscular hemoglobin saturation. The low color index, which is the single most valuable "index" when based on accurate red cell counts and hemoglobin determinations, has also been well popularized. The clinical significance of these changes have been dealt with more recently by Castle and Minot,[2] Heath and Patek,[3] Price-Jones [4] and Wintrobe,[5] while Parsons [6] has demonstrated the experimental corollary in the rat.

Notwithstanding the extensive clinical and experimental literature on the subject, nowhere has the correlation between the development of the anemia, the fall of the hemoglobin and the exhaustion of the iron stores been discussed.

Our awareness that a rather precise correlation existed between the length and severity of the bleeding, the consequent exhaustion of the stored iron of the body, and especially the reduction of hemoglobin, diminishing color index and the ultimate fall in red blood cells, came as a result of observing large numbers of patients with chronic bleeding. It has also become apparent that no significant fall in any of these (red cell count, hemoglobin or color index) will accompany chronic bleeding as long as the iron stores remain intact

Once the stored iron is exhausted, the negative iron balance first manifests itself in a diminution of hemoglobin and a concomitant fall in color index, since the red cell level remains unchanged. From here on the hemoglobin fall is almost linear, with the red cell fall constantly lagging behind and resulting in an ever decreasing color index. This divergence continues until the color index reaches about 0.5, at a hemoglobin level of 25 per cent (3.9 Gm.) and a red cell level of 2.5 million. Since this represents the lowest limit of the color index (Reimann's [7] "rule of the minimal color index") [8] any further fall in hemoglobin will be followed by a parallel fall in the red cell count.

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Though this report deals exclusively with adults, our experience has shown no difference for children or infants.

From the Hematological Laboratory and the Hektoen Institute for Medical Research of the Cook County Hospital

[1] Goodman, L., and Gilman, A The Pharmacological Basis of Therapeutics, ed 1, New York, Macmillan Company, 1941, p 1104 Haden R L.: Historical Aspects of Iron Therapy in Anemia, J. A M A **111**: 1059 (Sept 17) 1938

[2] Castle, W. B, and Minot, G. R Pathological Physiology and Clinical Description of Anemias, ed 2, New York, Oxford University Press, 1936, p 589

[3] Heath, C W, and Patek, A, Jr.. Anemia of Iron Deficiency, Medicine **16**: 267, 1937.

[4] Price Jones, Cecil The Red Cells in Microcytic Anemia, J. Path & Bact **35**: 759, 1932

[5] Wintrobe, M M Clinical Hematology, ed 1, Philadelphia, Lea & Febiger, 1942, p 484

[6] Parsons, L G Nutrition and Nutritional Diseases, Lancet **1**: 65, 1938

[7] Reimann, F Die ferrosensiblen chronischen Chloranamien (Asiderosen), Ztschr f klin Med **126**: 7, 1934

[8] Occasionally a case is encountered in which the hemoglobin will fall as low as 50 per cent before there is any fall of the red cell level In these instances the parallel fall begins at whatever level the 0 5 color index is reached, thus maintaining the relationship described

Because of this red cell lag it is quite apparent that the red cell count is extremely misleading and is of very little value in estimating the actual degree of anemia—i. e., the oxygen carrying capacity of the blood.

It is not difficult to understand the increasing discrepancy between hemoglobin and red cell count as the iron deficiency progresses on a purely mechanical basis—the available hemoglobin must be spread out more thinly to the cells being formed—but the reason for the falling red cell count and the final fixation of the ratio is somewhat more complex in its development. As the iron deficient state becomes full blown and the "available" iron stores become exhausted there is a drain on the ordinarily "unavailable" iron of the tissues, most especially the epidermoid structures (resulting in the typical hair, nail, skin and mucous membrane changes). Concurrently there is an increasing "maturation arrest" of the developing normoblast in the marrow. At first this "maturation arrest" merely produces a "left shift" in erythropoiesis, but eventually fewer and fewer cells reach the point in maturation which enables them to be liberated from the marrow. Ultimately (at a point corresponding to about one-half saturation of the cell with hemoglobin or color index 0.5) the iron deficiency increases to such a degree that not only is hemoglobin synthesis interfered with but nuclear maturation also becomes retarded and apparently even the formation of the cell stroma is impossible.

Along with the series of events outlined there occur specific morphologic changes in the red cell which, to a remarkable degree, parallel the falling color index. In normal blood or in well compensated bleeding the diameter, surface area, thickness, volume and hemoglobin contents are normal. With a fall of the color index to 0 9 the whole cell shrinks but for unit volume maintains its normal hemoglobin content. The cell is thus slightly microcytic. At color index 0.8 the cell has become still smaller and appears distinctly microcytic, with an accentuation of the central pale area due to increased thinness. At color index 0.7 the central pale zone is quite apparent, making the cell hypochromic; but its surface area is not reduced further. At color index 0.6 the hypochromia is quite evident, the majority of cells are very small, though considerable variation in size occurs, and occasional larger cells are present. Elongated cells and cells of bizarre shape appear in greater and greater numbers. At a color index of 0.5 (and the occasional lower levels[9]) the changes have reached their extreme. Poikilocytosis, microcytosis and hypochromia are the outstanding features of the cell, and though anisocytosis is also present it is not much in evidence since no significant numbers of large cells are found. In this range the cell appears to be little but a ring of hemoglobin. This picture is unmistakable and is pathognomonic of a severe "iron deficient state."

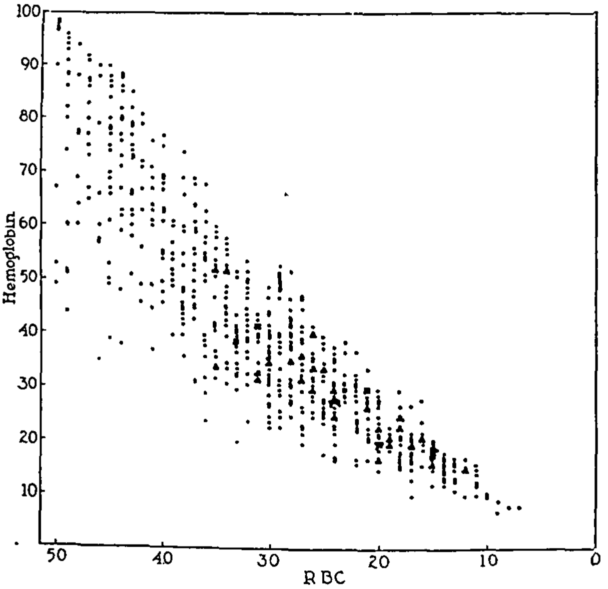

Fig 1 —Scatter curve, showing distribution of cases with hemoglobins plotted against red blood cells There is a close correlation between the anticipated and actual scattering of the cases

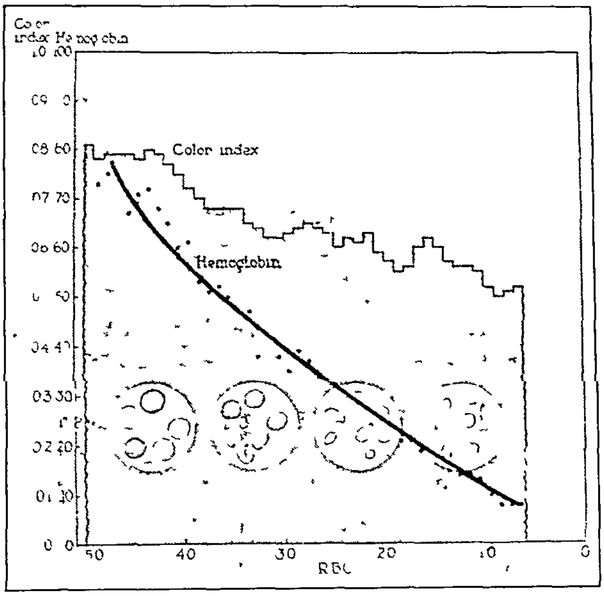

Fig 2 —Progressive fall in color index with diminishing hemoglobin due to iron deficiency The morphologic changes accompanying the diminishing color index are portrayed in the insets

In the development of this picture we have at first simply a readjustment of the cell envelop to the diminished hemoglobin available to it (microcytosis, reduced mean corpuscular volume). The cell envelop is unable to shrink beyond a certain point and therefore the available hemoglobin is less densely distributed (hypochromia, lowered mean corpuscular hemoglobin concentration). Finally, owing to the extreme paucity of iron, the cells are improperly made and the changes in size and shape become prominent (anisocytosis, poikilocytosis).

As the scatter curve indicates (fig. 1), the majority of cases comply rather closely with the expected pattern, but a considerable number fall above and below. The reason for this lies largely in the extreme heterogeneity of the group under analysis. It is obvious that the factors of cardiovascular age, rate of blood loss and protein nutrition alone will be enough to influence the scatter curves appreciably.

The findings herein described have even greater practical than theoretical implications.[10] The mere recogni-

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[9] The color index may fall to a lower level occasionally. In our series the lowest color index observed was 0 35.

[10] Knowing either the hemoglobin or the red cell count, one may calculate the expected color index in the iron deficient state from the following formulas, provided the red cell count is 2.5 million and the hemoglobin 25 per cent (3 9 Gm) or over

$$\text{Color index} = \text{RBC (in millions)} \times 0\,2$$

$$\text{Color index} = \frac{\sqrt{\text{Hgb }\%}}{10}$$

tion that the anemia is of the iron deficient type immediately suggests etiology, a program of diagnostic approach, treatment and prognosis. Perhaps most important of these is the recognition that the iron deficiency (as such) can be simply, rapidly and economically treated, since it responds specifically to the administration of peroral iron. From the diagnostic standpoint, not only may one know that a negative iron balance exists, but any deviation from the described red blood cell to hemoglobin relation may be interpreted as implying a complicating factor or factors. It should be noted parenthetically that "pure" iron deficiency would undoubtedly show a much more precise correlation than that seen in the scatter curve had our cases been selected so as to eliminate all added factors which accompanied the bleeding, such as tissue breakdown or infections.

CONCLUSIONS

1. The development of the anemia of iron deficiency is characterized by

(a) A linear fall in the hemoglobin.

(b) A fall in red blood cell count which lags behind the hemoglobin fall and results in:

(c) A progressive diminution in color index.

2. At a hemoglobin level of about 25 per cent (3.9 Gm.) the color index reaches its minimum (about 0.5) and from here on the fall in hemoglobin and the fall in red cells parallel each other.

3. Characteristic morphologic changes occur in the red blood cells with the falling color index. These appear in the following order: microcytosis, hypochromia, anisocytosis and poikilocytosis.

4. The exact knowledge of red cells to hemoglobin relationship is invaluable in the analysis of anemias.

5. The recognition of the "iron deficient" type of anemia is important because it casts etiologic, therapeutic and prognostic light on the underlying disease.

6. In evaluating the type of anemia and in assaying its physiologic severity the accurate determination of the hemoglobin outranks the importance of the red cell count.

Conditions of Behavior.—There are three types of conditions of behavior: environmental (including, of course, the social environment), physiological and psychological. It is obvious that if personality is to be sought among the conditions of behavior and if personality is to be regarded as something psychological, then it must be sought among the conditions of the third type. This statement should, of course, not be taken to mean that environmental and physiological factors do not condition personality. If, however, personality is one of the conditions of behavior, then environmental and physiological factors condition personality and, thereby, condition behavior in two ways: directly, and indirectly, through the role they play in the development and subsequent alteration of the personality which, having developed, becomes an additional conditioner of behavior. Not to minimize the complexity of the situation, we must not overlook the fact that the physiological factors which condition personality are themselves conditioned by the environment and that the organism undoubtedly plays an important role in conditioning the environment. We may pursue our studies as far as we like, but for the descriptive study of personality, if the term is to be psychologically meaningful, we must look to those conditions of behavior which are psychological in character.—Chein, Isidor: Personality and Typology, in Twentieth Century Psychology, New York, Philosophical Library, 1946.

FAT AND SUGAR INTOLERANCE AS CAUSE OF GASTROINTESTINAL SYMPTOMS

LOUIS TUFT, M.D., and HENRY J. TUMEN, M.D.
Philadelphia

Patients with long-continued gastrointestinal symptoms, such as flatulence, belching, heartburn, abdominal pain or discomfort and diarrhea, have always presented difficult problems to the practitioner. The treatment of these patients is often unsuccessful because the cause of such symptoms remains undiscovered. After prolonged and detailed diagnostic studies have failed to demonstrate the presence of significant organic disease, the physician frequently labels the disorder as one that is "functional" in origin. This term, however, is used in a sense that is largely negative—to indicate that there is no demonstrable organic disorder of the gastrointestinal tract. Since this designation is applied to patients with such varied disturbance, one hopes that we soon will understand more fully just what factors produce the "dysfunction" in individual patients. Recently attention has been focused on the emotional and psychic disturbance that may cause gastrointestinal symptoms, and adequate psychotherapy may be successful in relieving those patients who require it. Frequently, however, therapy is limited to rather routine dietary restriction, the use of sedative and antispasmodic drugs and attempts at reassurance. Like all general and nonspecific therapeutic programs, this one often fails.

Some years ago, and particularly since the publication of the studies of Rowe, Vaughan and others, attention was directed to the fact that some of the so-called functional gastrointestinal disturbances are due to sensitivity to certain foods. Although this often amounts to a specific allergy, this need not be the case. As Alvarez noted, many foods provoke digestive symptoms because their physical or chemical characteristics cause difficulty in their digestion. Such foods as onions, cucumbers and radishes, to name but a few, are notorious in this respect. The digestive symptoms which follow the ingestion of these foods are usually nonspecific or nonimmunologic and do not depend on any specific allergic mechanism. They are instances of what we prefer to consider food intolerance rather than specific food allergy. The bloating, heartburn and abdominal discomfort which occur after eating moderate amounts of such substances as radishes, cucumbers or sauerkraut are probably not allergic in origin since they are common to a great many individuals, most of whom are free of digestive symptoms if ordinary dietary precautions are observed. On the other hand, if a patient develops vomiting or diarrhea or severe abdominal pain after eating such foods as milk, eggs or wheat—foods which most of us eat with impunity and which are ordinarily considered to be easily digested—it is reasonable to conclude that a specific allergy to those foods is present. In fact, it is the occurrence of such abnormal reactions after partaking of small amounts of foods that usually cause no reaction, which is most characteristic of true food allergy.

Because it is not always easy to differentiate between food allergy and food intolerance, a difficult diagnostic problem often arises. This is true for the allergist as well as for the general practitioner. If the patient is known to have other allergy disorders and if the suspected foods are those which are ordinarily easily digested, diagnosis may be relatively simple. If, however, the patient is not known to be allergic and if symptoms are caused by a food which has a reputation for distressing many individuals, it may be quite difficult to decide whether a true allergy exists.

Skin tests, unfortunately, do not always provide the hoped for diagnostic assistance, even if the more sensitive intracutaneous technic is used. There is often no agreement between the reaction given by the patient's skin and that given by his gastrointestinal tract to the introduction of the food in question. On the other hand, a detailed history and a study of the time relationship between the ingestion of foods and the development of symptoms offers a most valuable guide. For this purpose an accurate food diary is most helpful. Elimination diets and diet trials are invaluable in the study of this problem. They are time consuming and require careful control. If properly and faithfully used, however, they often supply the missing link in the chain of diagnostic evidence. Whatever the mechanism responsible for the digestive symptoms, whether this is true allergy or simply a food intolerance, removal of the offending substance from the diet should be carried out in attempting to relieve the patient's symptoms.

For some time we have been interested in the problems of food allergy and food intolerance and have had occasion to study them in many patients. During the course of our investigations our attention has been focused on a type of food disagreement which it has been difficult to classify as allergic. We refer to the patients who develop various gastrointestinal symptoms after ingesting fats or sugars, substances not ordinarily regarded as allergens. We have thought it best to describe these as intolerances to fats and sugars, although it is possible that subsequent studies may show these to be true allergies.

Because of the scarcity of reports on this subject we feel justified in calling attention to it. The nature of the problem is best indicated by description of some of the cases in which it has been encountered.

REPORT OF CASES

Case 1.—A man aged 40 had had gastrointestinal symptoms for approximately twenty years. They consisted of epigastric discomfort, belching, heartburn, abdominal soreness and cramps. These had been associated with numerous attacks of diarrhea, during which frequent mucoid and watery stools were passed. Repeated and detailed diagnostic studies, including gastrointestinal and gallbladder x-rays, had revealed no abnormality other than an irritable colon. Treatment had consisted of the usual bland diet and the liberal use of sedatives and belladonna derivatives, with occasional opiates. Although these drugs were useful in controlling distress, the patient was seldom free from the symptoms, which recurred year after year. Diarrhea was particularly troublesome, and for long periods no formed stools were passed.

After numerous investigations it was finally discovered that the patient was sensitive to milk and that taking of even the minute quantities which might be used in cooking other foods would cause abdominal cramps and diarrhea. Although skin tests with milk were negative, the fact that a milk allergy existed was substantiated by clinical trial and by the demonstration of similar sensitivity to milk in other members of his family. It was also discovered that the patient was sensitive to chocolate and to tomatoes. When all of these foods were removed from the diet, symptoms were reduced somewhat although by no means eliminated.

In 1941 the patient had a particularly severe and prolonged attack of abdominal pain and diarrhea. Despite what seemed to be an adequate diet he began to lose weight, the loss finally amounting to 25 pounds (11 Kg.). In an attempt to regain the weight the caloric intake was increased by substantially increasing the quantities of fat and sugar in the diet. For some time prior to this the patient had observed that partaking of large amounts of fats—such as salad oils, fried foods and fat meats—had caused gastric upsets, although lean meats could be taken without difficulty. When large amounts of fats were added to the diet there were violent recurrences of diarrhea. Such substances as egg yolk, butter and the fat of beef could not be tolerated, although small amounts of peanut or coconut oil caused no distress. The ingestion of sugar also induced diarrhea. On one occasion the taking of B-lactose caused severe intestinal symptoms, diarrhea and burning of the anus. Sugar used as candy or in stewed fruits was observed to precipitate additional attacks.

After a great deal of personal experimentation had convinced the patient of his intolerance to fats and sugars, these were eliminated from the diet, except for small amounts of butter. Since goat's milk caused no distress, this was substituted for cow's milk, and saccharin was used instead of sugar. The change in diet was followed by a striking change. Epigastric discomfort, heartburn and eructations disappeared. Abdominal cramps and diarrhea ceased, and for the first time in twenty years the patient passed formed stools; even constipation existed at times. He lost a feeling of malaise and fatigue that had previously been quite annoying and also began to regain some weight. At present his general condition is remarkably improved. Gastric symptoms are negligible, and intestinal upsets occur only after dietary indiscretions. The ingestion of fat and sugars must still be restricted, and when these are taken in appreciable quantities distress recurs. It is to be emphasized, however, that although he cannot eat the fat of chicken, beef or ham, the meats themselves can be taken in large amounts if the fat is removed. It has also been observed that even after a long period of good health a violent attack of diarrhea can be induced by the ingestion of sugar.

Case 2.—A man aged 42 had suffered with recurring attacks of abdominal pain, flatulence and diarrhea for almost as long as he could remember. These symptoms varied in severity but rarely disappeared for more than an occasional period of one or two days. From time to time extremely severe and prostrating attacks of diarrhea occurred. In addition the patient suffered with occasional migraine headaches. There was no history of hay fever or asthma. The family history was negative for allergic diseases. As a result of personal observation the patient had discovered that the ingestion of certain foods, notably milk, tomatoes and fish, was regularly followed by more severe symptoms.

Detailed studies of the gastrointestinal system, including x-rays, various laboratory procedures and sigmoidoscopy, revealed no evidence of organic disease. By means of elimination diets it was found that the patient was sensitive to milk and cheese, eggs, certain fish and peas. Removal of these from the diet was followed by definite subsidence of the gastrointestinal symptoms and disappearance of the headaches. The patient did not obtain complete relief of his diarrhea, however, and even when avoiding the aforementioned foods and consuming only those which experience had indicated should be tolerated he suffered recurring attacks. After further experimentation with diets it was observed that diarrhea followed the ingestion of fats and that the eating of fats—butter, meat fats and egg yolk—would precipitate looseness of the bowels. When fats were avoided the patient was able to eat all foods except the specific allergens mentioned and to remain symptom free. At present, on no other therapy except observance of his diet he continues without any diarrhea.

Case 3.—A man aged 35 had suffered attacks of diarrhea for about twenty years. The diarrhea had occurred for long periods without remission and had been associated with severe abdominal pain, with flatulence and also with belching and epigastric discomfort. Over a period of time the patient had noted some relation of his symptoms to the use of certain foods and had gradually eliminated milk, chicken, eggs and oranges from his diet. There was no family history of allergic diseases, and the patient did not suffer with hay fever, asthma or hives. Repeated studies by numerous physicians had failed to demonstrate the presence of any organic disease of the gastrointestinal tract.

The patient was subjected to an intensive survey and detailed studies of the gastrointestinal tract were carried out. Nothing of significance was demonstrated, although the barium enema revealed moderate irritability and spasm of the colon, and on sigmoidoscopy some excess of clear mucus was found. Complete allergy studies were then performed. By elimination diets and careful use of food diaries, sensitivity to milk, eggs, chicken, orange, tomato, beets and corn was found. When the use of these was discontinued there was definite decrease in symptoms. It was soon discovered, however, that sporadic and apparently causeless attacks of diarrhea occurred even when all known allergens were avoided. After further diet experimentation the patient became aware of the relation between these attacks and his use of fat and sugar. A meal that contained fish was tolerated if the fish was not fried. Eating of fried fish, however, was followed by diarrhea. The same was true of meat. A tiny amount of butter could be taken, but the use of large amounts always induced abdominal cramps and a loose movement. Sugar was found to cause diarrhea if added to tea or coffee, and large amounts of hard candy could not be tolerated.

After a great deal of trial the patient's food tolerances were determined. The allergens mentioned must be avoided, but all other foods, except more than the smallest amounts of fats and sugars, can be taken without ill affect. Very tiny amounts of butter can be used, and a little sugar can be used in the cooking of fruits; but if these restrictions are not observed diarrhea recurs. It has also been noted that the sensitivity to fats is not restricted to specific fats. When other fats, such as soy bean oil or peanut oil, were tried in an attempt to increase caloric intake, the tolerance for these was found to be just as limited as the tolerance for butter fat.

Case 4.—A man aged 37 was studied originally in 1939 because of allergic rhinitis and so-called sinus headaches. The family history revealed asthma in one brother and late hay fever in another. Complete intracutaneous skin tests revealed sensitivity to house dust, feathers, orris root and many foods. Elimination or avoidance of the offending allergens plus dust desensitization was followed by excellent results, so that at the end of a year desensitization was discontinued.

The patient returned in April 1943 because of recurring migraine headaches, which were becoming increasingly frequent, and also such gastrointestinal symptoms as dyspepsia and occasional diarrhea. He then stated that for many years he had been subject to these symptoms. He had been studied by a gastroenterologist, but no organic disease was found. A tentative diagnosis of "cholecystitis" was made and a low fat diet advised.

As part of the allergic study the patient was placed on a trial diet which was also low in fats and sugars. He was also given histamine injections. The headaches decreased in frequency and severity and his general condition improved. Gastrointestinal symptoms diminished greatly and he became free from indigestion. Diarrhea disappeared. The patient then recalled that he had never been able to tolerate fatty foods or fats in general but stated that this had always been attributed to his "gallbladder condition." When he tried eating fats again symptoms recurred—even the eating of eggs caused distress, presumably from the yolks, because egg white could be used freely. Since avoiding fats he has had few gastrointestinal symptoms or none. He was able to take sugar in any desired quantity, however, and in his case no sugar intolerance was ever noted.

Case 5.—A woman aged 42 for approximately fifteen years had had recurrent attacks of diarrhea, usually associated with abdominal cramps. Repeated intensive studies had never revealed organic disease of the bowel. Because of the presence of a good bit of nervous tension, a diagnosis of irritable colon of neurogenic origin had been made. The patient came from a family of which various members suffered allergic disturbances. She herself had had hives after taking chocolate and fish and also had had mild angioneurotic edema of unknown origin. She suspected that the ingestion of certain foods—fish, chocolate, excessive coffee and orange—caused diarrhea.

Incomplete skin tests showed sensitivity to chocolate, tomato and spinach. On elimination trial diets improvement occurred, but subsequent additions were not continued long enough to determine definitely foods which were not tolerated. It was found, however, that the ingestion of fats and sugars frequently provoked flatulence and diarrhea and that reducing them often brought an improvement. One event may be described as illustrating the effect of sugar ingestion: while on vacation and at a time when no food had been taken for a number of hours, the patient ate some candy which was made of pure maple sugar; within one hour violent diarrhea occurred. Similar episodes were also recalled by the patient, who has since observed that eating concentrated sweets of any type frequently has a laxative effect, inducing watery bowel movements.

COMMENT

These few cases illustrate the type of clinical picture which apparently arises from intolerance to fats and sugars, and the histories are similar to those of a number of other patients studied by us. The symptoms may be gastric, intestinal or both. The gastric symptoms include fulness and distress, belching, eructations and heartburn after eating, which are usually known collectively as "indigestion." Because these symptoms develop after fat ingestion, the presence of gallbladder disease is often suspected even though there may be no objective evidence of this.

The intestinal symptoms usually consist of flatulence, cramp-like pains and bowel irregularities, chiefly attacks of diarrhea. The movements are watery or contain excessive mucus. In our patients diarrhea has generally been the most striking complaint and, because no organic bowel disease had been found to explain this, the majority of the patients had been considered to have "irritable colon" or "mucous colitis."

We believe that definite intolerance to fats and/or to sugars was responsible for the symptoms of these patients because of the relief which followed elimination of these substances from the diet or their reduction to extremely small quantities. The intolerance to these substances seems to be generic and not restricted to single fats or sugars. In patients who were sugar sensitive any sugar—cane, malt or dextrose—produced diarrhea, and symptoms even followed the intake of large amounts of starchy food. Fat intolerance was also manifested indiscriminately toward all fats such as butter, vegetable oils, egg yolk and the animal fats taken with fat meats. Difficulty in digestion of the latter class of fats explains why patients could eat a large amount of lean meats such as ham or beef if it was boiled or baked but could not eat the same meats if fried or prepared with the fat retained. The same patient might tolerate white meat of stewed or roast chicken but might have distress after eating fried chicken or even the dark meat of the fowl.

The question of the tolerance of these patients for fats and sugars is, of course, partially a quantitative one. It is almost impossible to maintain a diet which is completely free of fats or sugars. These patients were able to handle the amounts of these substances present in what might be called "invisible quantities" in their foods. Usually, however, they experienced difficulty when the fats and sugars were taken in more than minimal appreciable quantities.

It should be observed that all the patients whom we have encountered with either fat or sugar intolerance have had definite allergies to other foods. Since the number of patients described is small and since many of the patients were referred specifically for allergy surveys, this fact may merely be coincidental. We are sure that those symptoms will be encountered in persons who can be shown not to suffer with allergy. The large number of patients who claim not to tolerate fatty and fried foods—and who are often erroneously considered to have gallbladder disease—probably includes many who have the form of fat intolerance described here.

Certain aspects of the intolerance to fats and sugars argue against this being due to allergy as this term is generally defined. There is first the fact that no patient was encountered who was intolerant to only one specific fat or sugar. The intolerance seems to be directed against entire classes of these substances, so that it was impossible, for example, to substitute vegetable fats for butter or dextrose for sucrose. It has also been noted that the patients usually were able to eat the protein portions of meat or chicken or egg but could not digest these proteins if they were not separated from the fats naturally associated with them. Since it is generally believed that allergic reactions are developed only against proteins, it would seem that some other explanation must be found to explain these adverse reactions to nonprotein substances.

At present we have no satisfactory explanation for the intolerance to fats and sugars observed in these and other patients. The digestion and absorption of fats is a relatively complicated process. It depends on the presence in the bowel of adequate quantities of bile acids and of pancreatic and intestinal enzymes, and on the ability of the intestinal mucosa to absorb the fatty acids and glycerol, which are the end products of fat digestion. The digestion of sugars is a much simpler process, consisting largely of conversion of polysaccharides to monosaccharides and the absorption of these.

It seems probable that the patients who suffer with fat and/or sugar intolerance have some defect in their ability to absorb these substances. This is suggested by the absence of any demonstrable pancreatic or biliary defect and by the fact that in most instances intolerance for both fats and sugars occurred in the same individual. The absorption of fats and sugars alike is dependent on a process known as phosphorylation—combination with phosphates for transportation across the mucosal barrier of the intestinal wall. These patients, therefore, may have some disturbance which interferes with phosphorylation so that absorption of both fats and sugars is inadequate. If unabsorbed sugar and fatty acids are permitted to accumulate in the bowel, symptoms may develop quite promptly. The sugars not only undergo fermentation with consequent gas formation but also have a hydrophilic and therefore a laxative effect. The undigested fats also act as intestinal irritants both because of the bulk of accumulated fat and because of the local mucosal action of the fatty acids.

CONCLUSIONS

A group of patients had numerous gastrointestinal symptoms, presumably the result of intolerance to fats and sugars. The symptoms consisted of epigastric fulness, belching, eructations, abdominal pain and bowel irregularities, notably diarrhea.

These symptoms were encountered in patients who were known to have food allergies, but we are of the opinion that the symptoms noted were due to "intolerance" to fats and sugars rather than to allergy in the ordinary sense.

Although the mechanism of the intolerance to these foods is not understood, some defect in their absorption probably exists.

Intolerance to fats and sugars may be a more frequent cause of gastrointestinal symptoms than is usually suspected.

1530 Locust Street—1900 Rittenhouse Square.

PROLONGING THE EFFECTS OF PENICILLIN BY CHILLING

LIEUTENANT COMMANDER MAX TRUMPER, H(S), U.S.N.R.
and
COMMANDER GERSHOM J. THOMPSON, MC(S), U.S.N.R.

The virtues of a new curative substance are quickly broadcast; its limitations are examined later at more leisure. The ephemeral power of penicillin has set clinicians and scientists working on methods of prolonging its effective action, aiming to make unnecessary the renewal of intramuscular doses every few hours. Effective and prolonged blood levels have been obtained by using a penicillin beeswax-peanut oil mixture.[1] We have approached the problem from a different angle, using a simple method of chilling the area of injection [2] in order to retard the absorption of the penicillin by slowing the circulation around the site of the injection. For evaluating effectiveness of a new technic like chilling, it was decided to make the tests in gonorrhea cases, both because these were available and because they afford a good basis for study owing to the uniformity of the infection and the reliable criteria as to cure.

EFFECTS OF CHILLING ON CIRCULATION

The velocity of nearly all biologic processes, including those of sensation, varies directly with the temperature. Barcroft and Edholm [3] measured by means of a plethysmograph the blood flow in the human forearm after the limb had been placed in a constant temperature water bath for two hours. "The point at which the temperature was measured was about 1 inch below the skin covering the brachioradial muscle not far from the middle of the forearm." The temperatures employed ranged from 13 to 45 C. In all, seventy experiments were carried out on 5 normal men aged 25 to 40. They found that the average forearm blood flow ranged from 0.5 cc. per hundred cubic centimeters per minute at 13 C. to a speed of 5.9 cc. per hundred cubic centimeters per minute at 37 C. (cubic centimeters per hundred cubic centimeters arm volume per minute).

From the Naval Medical Research Institute (Lieutenant Commander Trumper) and the U. S. Naval Hospital (Commander Thompson), National Naval Medical Center, Bethesda, Md.

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This study was conducted with the cooperation of Lieut. Comdr. A. M. Hutter, MC (S), U.S.N.R., Lieut. Comdr. J. E. Drew, MC (S), U.S.N.R., Lieut. C. R. Spealman, H(S), U.S.N.R., P. V. Lucht, PhM2/c, V6, P. J. Cimock, PhM3/c, V6, SV, R. A. Funfar, PhM3/c, V6, U.S.N.R., and J. M. Ruder, PhM3/c, U.S.N.R.

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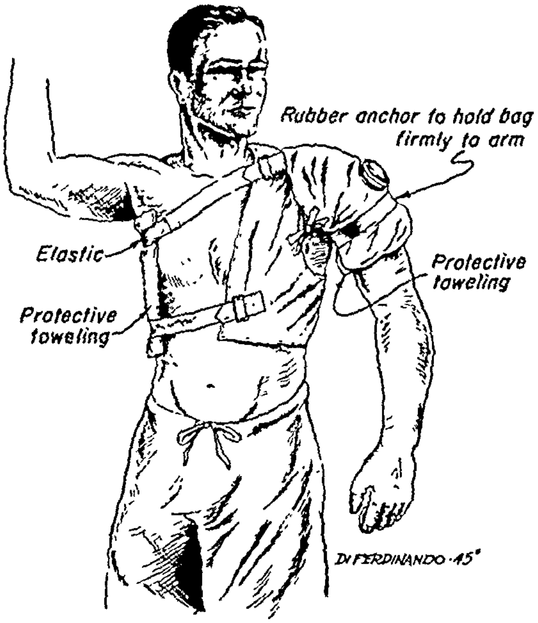
[2] Trumper, Max, and Hutter, A. M.: Prolonging Effective Penicillin Action, Science **100:** 432 (Nov. 10) 1944.

[3] Barcroft, H., and Edholm, O. G.: The Effect of Temperature on Blood Flow and Deep Temperature in the Human Forearm, J. Physiol. **102:** 5 (June 30) 1943.

This principle of the effect of temperature on body processes underlies the refrigeration methods used in surgery to create anesthesia for amputation cases.[4] The exact degree of coldness, however, best suited to insure both absence of sensation and safety from tissue trauma has not been agreed on, so that arbitrary standards still prevail.[5]

For our chilling technic we made, by means of a thermocouple, studies of the muscle temperature of 18 patients and found that by maintaining an ice bag around the upper shoulder for two hours the mean temperature in the deltoid muscle ½ inch below the skin was 17.3 C. (63 F.). This was sufficiently cold to insure absence of sensory function, obviating the pain of injection, and to retard the high rate of absorption of the pencillin, yet it afforded a wide margin of safety from danger of tissue trauma by freezing.

In order to learn the rate at which the muscle temperature returned to normal, a series of readings were then taken, commencing two minutes after removal of the ice bag and continuing every two minutes for one hour. The first reading showed the average temperature of the deltoid muscle ½ inch below the skin in the 18 cases to be 17.3 C. At the end of one hour the temperature averaged 29.5 C., which is equivalent to a rise in temperature of 1 degree C. every five minutes. Two additional cases under the same conditions showed temperatures so different from the other 18 cases that they have been grouped separately. In these 2 cases the temperature obtained two minutes after removal of the ice bag averaged only 24.5 C., and at the end of one hour the temperature averaged 35 C., which is equivalent to a rise of 1 degree every 5⅔ minutes.



Equipment for tests.

EQUIPMENT

The equipment used for the tests consisted of a circular ice bag of about 80 ounce capacity containing crushed ice and held in place by a supporting harness.[2]

Later this harness was replaced by a half vest, to which the ice bag was fastened by a cloth holder snapped on to the vest so that it could be removed readily. The vest was held in place by two belts, and an elastic strap fastened the ice bag holder securely to the upper arm, and two small tapes tied the holder to the vest, as illustrated in the accompanying sketch.

TECHNIC

The chilling procedure may be summarized by the following directions which were issued to ward personnel:

1. Two hours prior to the injection of penicillin, fill the ice bag 90 per cent full of crushed ice.
2. Before closing the bag squeeze out all excess air and repeat one hour later, so that the bag can be molded around the deltoid muscle.
3. Enclose the ice bag in the shoulder bag and place on the upper arm and shoulder, fasten it to the vest in the position indicated in the sketch and see that it is maintained there for two hours.
4. Chill the bottle of penicillin (100,000 units in 10 cc. of saline solution) in crushed ice for at least five minutes prior to the injection.
5. With a ½ inch hypodermic needle in a cool syringe, inject the chilled penicillin slowly into the deltoid muscle.
6. Replace the ice bag immediately and maintain it around the deltoid area for twelve hours, renewing the ice every few hours as needed.

CRITERIA FOR CURE

If both the smear and the culture of the prostatic secretion obtained forty-eight hours after the cessation of the urethral discharge were negative, the patient was considered cured. He was kept under observation, however, for a few additional days.

Clinical Results.—Three groups of patients, classified according to the dosage given, yielded the results in cures and failures given in the table after a single injection of penicillin according to the chilling technic.

Group A.—The potency of the penicillin undoubtedly affected the results. The first 15 patients, all treated with the same batch of penicillin, were cured. The next 7 patients were treated with the same dosage of a different batch of penicillin. Five of these 7 were not cured. Assays of penicillin used for these 7 patients showed it to be of reduced potency.

Group B.—Of the 35 patients treated with 70,000 units, 5 were those whose treatment with 50,000 had failed to effect a cure. Of these, 3 were cured when the dosage of 70,000 was administered. The remaining 2 were each treated with a total of 140,000 units in seven injections at two and one-half hour intervals. This resulted in 1 cure and 1 failure. The patient who was not cured when treated with first 50,000, then 70,000 and later 140,000 units for a gonorrheal infection was also being treated with oxophenarsine hydrochloride (mapharsen) and a bismuth compound for syphilis. He was finally given 2.4 million units of penicillin for the treatment of the syphilitic infection, which cured his gonorrhea.

All failures in group B were cured with the 140,000 units in seven injections at two and one-half hour intervals.

Group C.—Of the 4 failures in this group of 43 patients (each given 100,000 units) all were cured by retreatment with 140,000 units administered in seven injections at two and one-half hour intervals.

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COMMENT

The effectiveness of penicillin has proved so remarkable that we are just beginning to learn of its limitations. To date there have been relatively few reports emphasizing penicillin failures. Bloomfield, Kirby and Armstrong[6] in such a study stressed the fact that "in studying a new therapeutic agent it is necessary not only to discover the conditions in which it is effective but also to determine the circumstances under which it fails or at least yields unsatisfactory results." Therefore we have studied those cases which failed to be cured by the lower dosage. Our experience has been that the potency of the penicillin, the resistance of the patient and the duration of the infection prior to treatment are all important factors. Therefore the dosage of 100,000 units, but preferably 140,000 or 150,000 units, is needed to cover all the variations involved. The wide variations in potency have been observed previously by investigators with extensive clinical experience. This variation has been attributed by one of us[7] to the inexact methods of assay. Sternberg and Turner[8] reported that their dosage schedules were only approximate, because assays were subject to an error of plus and minus 25 per cent. They state that in two hospitals certain lots of the drug resulted in a 50 per cent failure at the 50,000 unit schedule of treatment. On the other hand, only 9 per cent failures were obtained in 137 cases treated with 40,000 units of penicillin. These observations were confirmed and extended by Riba, Schmidlapp and Bosworth,[9] who reported 23.6 per cent failures in 233 gonorrheal patients that had received 50,000 units (10,000 every three hours). Of these 55 failures, 48 were retreated successfully with 100,000 units (10,000 every three hours).

In a study such as this, the selection of controls is always difficult. The military hospital must attempt to return all patients to duty as quickly as possible, and one cannot therefore compare effective therapy with ineffective therapy on alternate patients. A recent report on the effect of gonorrhea of a single injection of 100,000 units of penicillin in aqueous solution has been published.[10] Of 58 cases so treated only 24 were cured, that is 58.6 per cent failed. One small series in which the penicillin was mixed with globin or albumin[7] and injected as a single dose of 100,000 units showed that 45 per cent failed.

The 100,000 unit dose seems to be the minimal amount which, when administered in divided dosage or in single injection when mixed with beeswax and peanut oil, or in single injection with the chilling technic can be relied on to cover variations in potency and resistance to infection and to yield 90 per cent cures in uncomplicated gonorrhea. With the recent abundant production of penicillin and its lowered cost, together with the wide margin of safety as to its toxicity, the need for minimal dosage no longer exists except for purposes of studying the mechanisms of its activity and the incidence of relapses or recurrent infections. To attain cures of 95 per cent or more a larger dosage is required, 140,000 or 150,000 units intramuscularly within fifteen hours.[11] The maximum dosage used in our present studies on uncomplicated gonorrhea was 140,000 units (seven injections at two and one-half hour intervals), which proved successful in all the retreated cases in which it was used. Thus, no examples of penicillin fastness were observed.

In studying our failures with the 50,000 unit dosage, a factor appeared which, if confirmed by a larger number of cases, may prove significant. That factor is the duration of the infection prior to treatment and the role of the defense mechanisms of the body in enabling the penicillin to effect a cure.

The 5 patients who failed to be cured with 50,000 units had, when admitted, a urethral discharge on the average of one and seven-tenths days' duration and their white blood cell counts averaged 7,090. The patients who were cured with 50,000 units had when admitted a urethral discharge on the average of six days' duration and their white blood cell counts averaged 9,760.

In the group of patients treated with 70,000 units the duration of the discharge of the 5 who failed also averaged one and seven-tenths days, in contrast to seven days' duration in those cases that were cured. The differences in white blood cell counts were not significant.

Results in Three Groups of Patients

Group	Penicillin Dosage, Units	Patients Treated, Number	Patients Cured, Number	Patients Failed, Number	Patients Failed, per Cent
A	50,000	22	17	5	22.7
B	70,000	35	30	5	14.3
C	100,000	43	39	4	9.3

In the group of patients treated with 100,000 units, the duration of the urethral discharge of the 4 who failed averaged one and seven-tenths days; that of the cured cases averaged three and three-tenths days. The differences in white blood cell counts were not significant.

The theory that in uncomplicated cases the longer the duration of the infection prior to treatment the easier it is to obtain a cure is borne out only by groups given borderline dosage. Since the higher dosage cured irrespective of the duration of the infection or the height of the white blood cell count, it obscured the role of the body's defense mechanisms.

From our limited experience in this study it seems probable that a duration of the infection of at least six to seven days is a factor in determining the percentage of cures by penicillin therapy with borderline dosage, but that its role is difficult to ascertain when using dosages of 100,000 units or more.

This experience is in accord with that of sulfonamide therapy in gonorrhea. Long and Bliss[12] in their monograph on sulfonamide drugs present a number of reports in which the rate of cure in simple gonorrhea was always higher in the chronic than in the acute infection. They observed a definitely greater incidence of relapse in individuals whose infections were treated on the first to the seventh day of the infection in contrast to those whose infections were eight or more days old. Cokkinis and McElligott[13] advanced the theory that, the longer treatment is delayed, the more chance there is for the body to acquire immunity and to dispose of the organisms arrested by sulfanilamide. Support of this is provided by the complement fixation test, which rarely becomes positive before the second week.[12]

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Various investigators[14] have reported that sulfonamide resistant gonorrhea can be effectively treated with penicillin in relatively small dosage. This can be attributed either to the greater potency of the penicillin used or to the fact that the duration of the infection had progressed to the point where antibodies were being produced in quantities sufficient to be an influential factor in determining the response to therapy.

Our views are in accord with the opinion expressed by Florey and Jennings[15] that "the good effects of penicillin depend on simultaneous action by the leukocytes and other defense mechanisms of the body which deal with the bacteria while multiplication is held in check by the penicillin."

SUMMARY AND CONCLUSIONS

One hundred patients with uncomplicated gonococcic urethritis were treated with a single dose of from 50,000 to 100,000 units of penicillin dissolved in saline solution and injected into the deltoid muscle, which was chilled before and after the injection.

Results from dosages of 50,000 and of 70,000 units gave cures of 77.3 per cent and 85.7 per cent respectively.

The 100,000 unit dosage cured 91 per cent of the patients. This percentage compares favorably with the results obtained by others using multiple injections as well as the single injection of 100,000 units of penicillin in mixtures of beeswax and peanut oil.

It can be concluded from the high percentage of cures that the chilling technic prolonged the effective action of penicillin, reduced to one the number of injections required to treat uncomplicated gonorrhea and rendered that injection painless, all of which was accomplished without introducing any other foreign substance intramuscularly.

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Food Inspection.—The principles of good food preservation are very simple. They depend on the facts that: 1. Food spoilage is due largely to bacterial action. Thus, bacterial control results in food preservation. 2. Bacteria require certain favorable conditions for development. In general, they require (*a*) a suitable —usually warm—temperature, (*b*) moisture, (*c*) protein food and (*d*) a favorable medium for growth. For example, a high concentration of salt or sugar will check the growth of many bacteria.—Smillie, Wilson G.: Preventive Medicine and Public Health, New York, Macmillan Company, 1946.

TUBERCULOSIS AND ANAL FISTULA

RAYMOND J. JACKMAN, M.D.
and
LOUIS A. BUIE, M.D.
Rochester, Minn.

In 1939, together with Smith, we[1] reported a study of 206 consecutive patients who had anal fistulas and we considered the part tuberculosis plays in the disease. Since that time we have had the opportunity to study a larger series of patients and these, together with the 206 previously studied, compose the 600 patients on whom this report is based.

Opinions have varied widely as to the percentage of anal fistulas that are tuberculous and as to the part tuberculosis plays in anal fistulas. There are two reasons for the variance of opinion. The first is that the criteria on which the diagnosis is made differ. At one extreme are those who make demonstration of the tubercle bacillus in the fistula a requisite for positive diagnosis. At the other extreme are those who feel that the clinical picture, or even the demonstration of tuberculosis elsewhere in the body, is enough to establish the diagnosis of a tuberculous fistula. The second reason for the variance of opinion is the difference in the source of the material investigated. For example, figures or percentages from a tuberculosis sanatorium would be different from those from an institution in which the treatment of tuberculous patients is not the primary interest.

METHODS OF DETERMINING THE TUBERCULOUS OR NONTUBERCULOUS NATURE OF AN ANAL ABSCESS OR FISTULA

Inspection.—Many writers and investigators have felt that a tuberculous abscess or fistula has certain peculiar characteristics which make clinical diagnosis possible. It is not our purpose in this discussion to go into these characteristics. In our experience conclusions drawn from such a study, if lacking in scientific corroboration, have been of little value.

Guinea Pig Inoculation.—Some workers, particularly Martin and Sweany[2] and Fansler,[3] have questioned the reliability of guinea pig inoculation as a means of determining the tuberculous nature of anal fistulas. The reasons that can be offered against reliability of the method are the following: 1. It may yield a false positive. That is, the cause of the fistula may not be tuberculosis, yet micro-organisms of tuberculosis may have entered the fistula through its enteric opening. 2. It may yield a false negative. That is, the cause of the fistula may be tuberculosis, yet viable bacilli may not have been injected into the guinea pig or, having been injected, on rare occasions may not have been in sufficient number to give rise to tuberculosis in the body of the animal. Feldman and Magath,[4] however, on the basis of vast experience, have expressed the opinion that guinea pig inoculation warrants confidence in its reliability as a means of designating the tuberculous nature of clinical material.

From the Section on Proctology, Mayo Clinic.

[1] Buie, L. A.; Smith, N. D., and Jackman, R. J.: The Role of Tuberculosis in Anal Fistula, Surg., Gynec. & Obst. **68:** 191-195 (Feb.) 1939.

[2] Martin, C. L., and Sweany, H. C.: Tuberculous Anal Abscess and Fistula: Criteria for Diagnosis, Surg., Gynec. & Obst. **71:** 295-296 (Sept.) 1940.

[3] Fansler, W. A.: The Relationship of Tuberculosis to Fistula in Ano, J. A. M. A. **85:** 671-673 (Aug. 29) 1925.

[4] Feldman, W. H., and Magath, T. B.: The Reliability of Guinea Pig Inoculation in the Diagnosis of Tuberculosis, Am. Rev. Tuberc. **24:** 312-325 (Sept.) 1931.

Therefore it will be considered here that a negative result of guinea pig inoculation is dependable but, as shown by Martin and Sweany, that a positive result in a tuberculous patient with positive sputum is subject to error because fecal contamination may have occurred.

Histopathologic Examination. — McDonald[5] stated that the histologic picture of tuberculosis is definitive if the typical picture is seen. This picture will not be described here. The errors in histopathologic diagnosis of tuberculosis are those of inadequate sampling and, as Sweany[6] stated, the adequacy of the sampling depends on the experience of the one who takes the specimen. He stated that if samples are carefully and repeatedly taken, and if serial sections are made and carefully studied, the histologic diagnosis rarely will be erroneous. The laborious procedure of making and studying serial sections is a discouraging task when a relatively simple procedure such as guinea pig inoculation is available.

Combination of Clinical and Histologic Examination and Guinea Pig Inoculation.—In the examination to find whether a fistula is tuberculous or nontuberculous, clinical aspects, histologic examination and guinea pig inoculation all should be taken into consideration. If a specimen of fistula is taken from a patient who has pulmonary tuberculosis, possibly that fistula is tuberculous, but if guinea pig inoculation and further microscopic studies give negative results it should be considered nontuberculous. These three factors were considered in this study. Each of the findings was evaluated and compared with the other two.

TABLE 1.—*Results of Primary Study*

	Cases		Evidence			
Group	Number	Per Cent of 600	Clinical	Roentgenologic	Histologic	Guinea Pig
1	478	79.6	Negative	Negative	Negative	Negative
	49	8.2	Childhood Ghon	Negative	Negative	Negative
	527	87.8				
2	21	3.5	Positive	Positive	Positive	Positive
3	19	3.2	Positive	Positive	Negative	Negative
4	18	3.0	Positive	Positive	Negative	Positive
5	9	1.5	Negative	Negative	Negative	Positive
6	6	1.0	Negative	Negative	Positive	Negative
Total	600	100.0				

MATERIAL AND METHOD

It is emphasized that the patients included in this study presented the variety of complaints encountered in general practice. Including the 206 cases which formed the basis of our report, made with Smith in 1939, 618 consecutive cases in which operation was performed for anal fistula came under consideration. Before surgical operation each patient underwent physical examination, and routine studies of the blood and urine were performed. In addition to this, a roentgenogram of the thorax of each patient was made. Also sigmoidoscopy and, if indicated, other special studies, such as examinations of sputum, were carried out. At the time of the operation the surgeon took particular care to dissect out the fistulous tract. Half was sent for gross and microscopic examination; for the latter, from two to five sections were stained with hematoxylin and eosin. The other half was used for guinea pig inoculation.

The foregoing procedure could not be followed in full in 18 cases and they were eliminated from the study. Thus 600 cases remained for complete and successful study.

RESULTS

The results of the investigation are presented in the accompanying tables, of which table 1 is concerned with the primary study. Therein it will be noted that cases of group 1 were negative in all respects, for we consider that if the only evidence of tuberculosis found in a given case consists of a healed, childhood type of lesion, or a Ghon primary complex, the findings are, to all intents and purposes, negative. In group 2 all evidence was recorded as positive. In group 3 results of histologic examination and guinea pig inoculation were negative whereas clinical and roentgenologic evidence was positive. However, it is generally agreed that a tuberculous lesion of the lungs may coexist with a nontuberculous anal fistula. Therefore, concerning groups 1, 2 and 3, no particular questions arise.

TABLE 2.—*Results of Histologic Reexamination (the Restudy)*

	Cases		Diagnosis	
Group	Number*	Per Cent of 600	Reversed to	Remained
4	12	2.0	Positive	
	6	1.0	....	Negative
5	6	1.0	Positive	
	3	0.5	....	Negative
6	4	0.7	Negative	
	2	0.3	Questionable (called positive)	

However, in groups 4, 5 and 6, results of histologic examination and guinea pig inoculation did not agree and questions do arise. In group 4 did guinea pig inoculation give a false positive result or were insufficient sections studied microscopically? In group 5 were we dealing with a primary tuberculous fistula; did guinea pig inoculation give a false positive result; were lesions overlooked in histologic or, for that matter, in clinical, examination? In group 6 was the histologic evidence correct and all other evidence deficient?

TABLE 3.—*Results of Combining Tables 1 and 2*

	Cases		Evidence			
Group	Number	Per Cent of 600	Clinical	Roentgenologic	Histologic	Guinea Pig
1	531*	88.5	Negative	Negative	Negative	Negative
2	33†	5.5	Positive	Positive	Positive	Positive
3	19	3.2	Positive	Positive	Negative	Negative
4	6	1.0	Positive	Positive	Negative	Positive
5	3	0.5	Negative	Negative	Negative	Positive
6	2	0.3	Negative	Negative	Positive	Negative
7‡	6	1.0	Negative	Negative	Positive	Positive
Total	600	100.0				

* The included new cases were histologic negatives derived on reexamination from group 6 of table 1. See explanation in text.

† The included new cases were histologic positives derived on reexamination from group 4 of table 1. See explanation in text.

‡ This new group was formed when, on reexamination, reversal of the histologic diagnosis in 6 cases of group 5 of table 1 required their removal from that group. See explanation in text.

In view of these questions, Drs. A. C. Broders and J. R. McDonald of the Division of Surgical Pathology made histologic reexamination of the material representing these groups. In many instances the reexamination necessitated the making of serial sections stained with hematoxylin and eosin and, when still further examination was necessary, by the Ziehl-Neelsen method or the auramine technic. This resulted in reversal of the histologic diagnosis in two thirds of the cases of each of the groups 4, 5 and 6 (table 2). The restudy demonstrated the importance of examining many sections of fistulous tissue to determine its tuberculous or nontuberculous nature.

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[5] McDonald, J. R.: Personal communication to the authors.

[6] Sweany, H. C., quoted by Martin, C. L., in Goldberg, Benjamin: Clinical Tuberculosis, Philadelphia, F. A. Davis Company, 1942, vol. 2, pp. 1149-1150.

On the basis of results of the restudy, the quantities recorded in table 1 were modified and table 3 resulted. The redistribution, which allowed table 3 to be formed from table 1, took place in the following ways: On restudy, reversal of the histologic diagnosis in 4 cases of group 6 caused these cases to conform to the all negative pattern of the original group 1 (table 1); therefore, in the redistribution, these 4 cases were added to group 1 (table 3). Also, on restudy, reversal of the histologic diagnosis in 12 cases of group 4 caused these cases to conform to the all positive pattern of the original group 2 (table 1); therefore, in the redistribution, these 12 cases were added to group 2 (table 3). However, reversal on restudy of the histologic diagnosis in 6 cases of group 5 did not cause these cases to conform to any of the original patterns (table 1) and, in the redistribution, group 7 came into being (table 3). It is evident that, on restudy, the incidence of agreement between the results of histologic examination and guinea pig inoculation was increased.

COMMENT

From the foregoing report of the primary and subsequent study, certain questions can be answered with a fair likelihood of the answers being accurate.

1. Should the presence of an anal fistula arouse the suspicion that pulmonary tuberculosis or a tuberculous focus is present in the body? Our study of 600 cases in which anal fistulas were present indicates that in a majority (88.5 per cent) there was no tuberculosis, either in the fistulas or elsewhere in the body, while in 11.5 per cent evidence of tuberculosis was found somewhere in the body. This figure of 11.5 per cent is sufficiently high to enable one to answer the foregoing question in the affirmative.

2. Is the tubercle bacillus a primary or a secondary invader of an anal fistula? In 3 cases, or 0.5 per cent (table 3, group 5), inoculation of a guinea pig with material from a fistula gave a positive result; in 2 cases, or 0.3 per cent (table 3, group 6), results of histologic examination only of the fistula were positive, and in 6 cases, or 1 per cent (table 3, group 7), both gave a positive result; yet in these 11 cases no focus of tuberculosis could be found elsewhere. We are unable to explain this, but as nearly as we could determine in this small group the fistula was primarily tuberculous. Fundamentally, however, it is impossible to answer the foregoing question from this study, nor are we familiar with any method available to answer such a question conclusively.

3. What percentage of anal fistulas are tuberculous? Our study would indicate that a relatively small number (7 to 8 per cent) of anal fistulas are tuberculous and in nearly all instances (thirty-three out of thirty-nine) in which they are unmistakably tuberculous there is a focus elsewhere in the body. The rounded percentages given in the previous sentence are derived from table 3, wherein groups 2 and 7 represent unmistakably tuberculous fistulas (6.5 per cent) and groups 4, 5 and 6 represent fistulas concerning the tuberculous nature of which some question remains (1.8 per cent). The total of these two percentages is 8.3.

4. What is the most satisfactory method of determining the tuberculous or nontuberculous nature of an anal fistula? If the guinea pig inoculation is successfully carried out and the result is negative, further examination should not be necessary. If it is positive and the histologic examination does not reveal tuberculosis, the possibility has to be considered that the tissue injected into the guinea pig was contaminated.

DIABETIC NOCTURNAL DIARRHEA

E. PAUL SHERIDAN, M.D.
and
C. CABELL BAILEY, M.D.
Boston

Diarrhea in diabetic patients is always a troublesome and often a serious complication. Our purpose in this report is to describe a syndrome characterized by intermittent nocturnal diarrhea in patients with diabetes mellitus.

In 1936 Bargan, Bollman and Kepler[1] reported 2 cases in which a tentative diagnosis of "diarrhea of diabetes" was made and stated that no failure of pancreatic external secretion could be demonstrated. In their cases the administration of pancreatic extract did not correct the disorder. Joslin, Root, White and Marble[2] also have discussed the association of nocturnal diarrhea and diabetes. The first case of nocturnal diarrhea in this clinic occurred in 1912.

Forty patients with this complication who had hospital studies and follow-up observations were selected for this investigation. The characteristic symptomatology of this syndrome is intermittent nocturnal diarrhea consisting of brown watery stools in a patient with diabetes mellitus. The intermittent character of the diarrhea was a striking finding in 34 of the 40 cases, while nocturnal incontinence of feces occurred in 31 cases.

Following is a representative case:

A. H. S., a man aged 25, developed severe diabetes requiring 60 units of insulin daily in September 1929. His diabetes was poorly controlled from the start. In August 1935 he developed a nocturnal diarrhea of eight to ten watery stools which showed no gross blood, mucus or pus. A barium enema and an upper gastrointestinal x-ray revealed only hypermotility of the intestinal tract. Proctoscopy was negative.

The feces did not show evidence of parasites, and cultures did not reveal abnormal organisms. Microscopically only occasional fat droplets, a few undigested muscle fibers and a few starch granules were seen. No macroscopic blood was detected. Several benzidine tests varied from 0 to ++. A quantitative fat estimation of the stools for seventy-two hours revealed 1.4 per cent, or an average of 11 Gm. of fat in twenty-four hours. An Ewald test meal revealed no free hydrochloric acid, and the total acidity was 30 degrees. Examination of the duodenal contents revealed normal proteolytic, slightly reduced lipolytic and definitely reduced amolytic enzymes. Agglutination for typhoid, paratyphoid and dysentery organisms was negative.

From the George F. Baker Clinic, Elliott P. Joslin, medical director. Dr. Sheridan is Fellow in Medicine, George F. Baker Clinic. Dr. Bailey is Research Fellow in Medicine, Harvard Medical School, and physician, New England Deaconess Hospital.

[1] Bargan, J. A.; Bollman, J. L., and Kepler, E. J.: "Diarrhea of Diabetes" and Steatorrhea of Pancreatic Insufficiency, Proc. Staff Meet., Mayo Clin. 2:737 (Nov. 18) 1936.

[2] Joslin, E. P.; Root, H. F.; White, Priscilla, and Marble, Alexander: Treatment of Diabetes Mellitus, ed. 7, Philadelphia, Lea & Febiger, 1940, p. 465.

The patient was placed on a low residue diet and given dilute hydrochloric acid 60 drops daily, tincture of belladonna 30 drops daily and several costive drugs including bismuth (subcarbonate) and paregoric, all of which failed to relieve the diarrhea. Crude liver extract was then tried intramuscularly in 2 cc. daily doses with striking improvement and a reduction of the number of stools to only one or two daily.

The nocturnal character of this type of diarrhea is the most striking symptom. Patients frequently are troubled little or none at all during the day yet may have eight, ten or more stools at night. The stools in all cases were watery and unlike the frothy, bulky, odorous stools found in steatorrhea. Incontinence of feces during sleep is a most embarrassing feature.

The intermittent character of this diarrhea is also striking, and spontaneous remission is usually followed in a few days or weeks by a recurrence. The effectiveness of treatment is difficult to evaluate without follow-up studies because of this tendency to temporary spontaneous improvement.

Observations in Forty Cases

Case No.	Sex	Age at Onset of Diarrhea	Duration of Diabetes, Years	Total Insulin Dose, Units	Watery Nocturnal Diarrhea	Nocturnal Incontinence	Intermittent Character	Neuritis	Spinal Fluid Total Protein	Liver Extract Response
1	♀	36	11	46	Yes	Yes	Yes	Yes	...	Decided improvement
2	♀	30	¼	22	Yes	No	Yes	No	...	Not given
3	♂	49	13	38	Yes	Yes	Yes	Yes	...	Moderate improvement
4	♂	61	9	16	Yes	Yes	Yes	Yes	87	Not given
5	♂	35	6	42	Yes	Yes	Yes	Yes	121	Not given
6	♂	35	14	38	Yes	Yes	Yes	No	...	Decided improvement
7	♀	69	20	28	Yes	Yes	Yes	Yes	35	Moderate improvement
8	♀	52	8	28	Yes	....	Yes	Yes	70	Not given
9	♂	29	16	40	Yes	Yes	Yes	No	80	Complete subsidence of diarrhea
10	♂	45	10	48	Yes	Yes	Yes	Yes	117	Decided improvement
11	♂	24	8	38	Yes	No	Yes	No	...	Decided improvement
12	♂	66	7	10	Yes	Yes	Yes	No	...	Decided improvement
13	♂	35	5	80	Yes	Yes	No	Yes	249	Moderate improvement
14	♂	42	15	66	Yes	Yes	Yes	No	...	Moderate improvement
15	♂	79	7	24	Yes	Yes	Yes	No	53	No response; only five injections given
16	♂	53	8	30	Yes	Yes	Yes	Yes	...	Not given
17	♀	24	18	50	Yes	Yes	Yes	Yes	...	Not given
18	♀	62	12	46	Yes	Yes	Yes	Yes	89	Slight improvement
19	♂	51	20	24	Yes	Yes	Yes	Yes	...	Moderate improvement
20	♂	32	7	37	Yes	Yes	Yes	Yes	82	Decided improvement
21	♀	50	11	32	Yes	Yes	Yes	No	...	Decided improvement
22	♀	20	5	64	Yes	Yes	Yes	No	43	Decided improvement
23	♀	23	8	10	Yes	Yes	No	No	...	Not given
24	♂	34	18	44	Yes	....	....	No	...	Decided improvement
25	♀	54	14	46	Yes	Yes	Yes	Yes	...	Not given
26	♀	32	9	36	Yes	No	No	Yes	60	Decided improvement
27	♂	27	4	40	Yes	Yes	Yes	Yes	...	Decided improvement
28	♂	35	2	48	Yes	No	....	Yes	91	Decided improvement
29	♂	35	1	44	Yes	Yes	Yes	Yes	165	Decided improvement
30	♂	35	6	66	Yes	Yes	Yes	No	...	Decided improvement
31	♂	25	6	50	Yes	....	Yes	No	...	Decided improvement
32	♀	56	7	28	Yes	Yes	Yes	Yes	...	Not given
33	♀	71	4	34	Yes	No	Yes	No	...	Not given
34	♀	27	8	40	Yes	Yes	Yes	No	44	No response
35	♂	54	6	20	Yes	Yes	Yes	Yes	112	Decided improvement
36	♀	28	10	40	Yes	Yes	Yes	Yes	63	Decided improvement
37	♀	44	3	52	Yes	Yes	Yes	No	...	Decided improvement
38	♀	74	18	48	Yes	Yes	Yes	No	...	Decided improvement
39	♂	29	4	65	Yes	No	Yes	No	117	Not given
40	♂	34	7	35	Yes	Yes	....	Yes	65	Not given

DATA IN FORTY CASES

At the onset of the diarrhea the average age of the patient was 42 years, the ages ranging from 20 to 79 years. The average duration of diabetes was nine years. In this series there were 23 males and 17 females.

LABORATORY STUDIES

X-Rays.—Examination of the upper gastrointestinal tract in 17 cases revealed no abnormalities, although pancreatic calculi were found in 1 instance. Examination of the colon by barium enema was negative in 28 cases with the exception of increased spasticity observed in 6 cases. In the 15 cases studied by proctoscopy the mucosa was normal. A rectal examination in 38 cases was negative except for a relaxed anal sphincter in 5 patients.

Gastric Analysis.—Achlorhydria, even after histamine, was found in 14 of the 29 patients whose gastric contents were examined. The remaining 15 patients had free hydrochloric acid averaging 25 degrees. Achlorhydria has been estimated to occur in 30 to 40 per cent of all diabetic patients,[3] and Root [4] has emphasized that its frequency tends to increase with the duration of diabetes as well as with the age of the patient.

Spinal Fluid.—Eighteen cases were studied with spinal fluid determinations. The cell count in every case was found to be within normal limits. Seventeen of the 18 cases showed a definite elevation of the total protein averaging 88 mg. In one third of them (6 cases) the total protein was more than 100 mg. These findings suggest the presence of a neurogenic disturbance in the central nervous system.

Hematology.—The blood picture was remarkable in that 38 of the 40 patients had normal erythrocyte counts. The remaining 2 patients had red blood cell counts of 3,940,000 and 3,820,000. The hemoglobin content averaged 90.6 per cent. The blood Hinton test was negative in 39 cases and doubtful in 1. The hematology indicates that pernicious anemia and syphilis are not factors in the etiology of this condition.

Ocular Fundi.—Ophthalmologic examination in 33 cases revealed the presence of diabetic retinitis in 11, or one third of the total examined. In 1 case the retina could not be seen because of cataracts.

TREATMENT

Various therapeutic measures, including vitamins, chemotherapy (succinylsulfathiazole and sulfaguanidine), hydrochloric acid and drugs exerting a costive effect have proved of little or no value. A low residue, nonirritating diet is always prescribed but alone is not effective. It was found, however, that crude liver extract given parenterally was of definite value in controlling the diarrhea in 26 of the 28 cases in which it was used. Some patients discontinued this treatment a short time after returning home and a recurrence of the diarrhea followed, but when the liver extract was resumed the diarrhea again subsided. Although the tendency to spontaneous remission must be remembered in evaluating any treatment in this disorder, the response to liver extract is prompt and striking in most cases. The necessity of continuous liver extract treatment cannot be overemphasized. Two to four cc. of crude liver extract given intramuscularly daily for four to six days has proved effective and should be followed by weekly injections.

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[3] Bowen, B. D., and Aaron, A. H.: Gastric Secretion in Diabetes Mellitus, Arch. Int. Med. **37**: 674 (May) 1926.

[4] Root, H. F.: Diabetes and Pernicious Anemia, J. A. M. A. **96**: 928 (March 21) 1931.

COMMENT

This syndrome of nocturnal diarrhea seems to be a specific complication of diabetes mellitus and as far as we can determine has not been reported in nondiabetic patients.

Previous poor diabetic control, as evidenced by hyperglycemia and glycosuria, was outstanding in each of the 40 cases and may act as an important etiologic factor.

Diabetic neuritis preceded the onset of the diarrhea in 58 per cent of the 40 cases reported, which suggested the possibility that the diarrhea syndrome may be a manifestation of diabetic neuropathy. Further, in 2 of these cases, in which eventually the neuritis was cured, the diabetic diarrhea completely disappeared. If this is the case one might suspect a disturbance of sympathetic innervation, since it has been shown[5] that these nerves exert an inhibiting action to the entire colon. Learmonth and Markowitz[6] have sectioned the colonic (sympathetic) nerve to the colon in dogs and demonstrated increased colonic activity. Rundles[7] recently pointed out that patients with diabetic neuropathy may develop unusual degrees of peripheral sympathetic nerve damage as revealed by sweating deficiencies, loss of vasomotor and pilomotor control, dependent edema and certain types of skin alterations. He further stresses the sympathetic nerve dysfunction in his report of orthostatic hypotension and orthostatic tachycardia in 5 patients with diabetic neuropathy. Rudy and Epstein[8] also have emphasized that diabetic neuritis is not limited exclusively to the peripheral nerves but involves the entire nervous system including the central, peripheral and autonomic parts, with an especial predilection for the peripheral nerves.

CONCLUSION

1. Nocturnal intermittent diarrhea is a distinct syndrome which may occur in patients with diabetes mellitus.
2. Evidence suggests that this condition may be a manifestation of diabetic neuropathy.
3. Crude liver extract parenterally offers the most effective symptomatic treatment.

81 Bay State Road.

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[5] *Rabinowitch*, I. M.; Fowler, A. F., and Watson, B. A.: Gastric Acidity in Diabetes Mellitus, Arch. Int. Med. **47**: 384 (March) 1931.

[6] Learmonth, J. R., and Markowitz, J.: Studies in Innervation of the Large Bowel: Influence of the Lumbar *Colonic Nerves on the* Distal Part of the Colon, Am. J. Physiol. **94**: 501 (Sept.) 1930.

[7] Rundles, R. W.: Diabetic Neuropathy, Medicine **24**: 111 (May) 1945.

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Clinical Notes, Suggestions and New Instruments

GENERALIZED SUBCUTANEOUS EMPHYSEMA FOLLOWING RESECTION OF LARGE BOWEL

LOWELL BROWN, M.D., and J. WILLIAM HINTON, M.D.
New York

While generalized subcutaneous emphysema is not an infrequent clinical finding, it is an unusual occurrence following surgical operation on the large bowel. Only 2 similar cases have been reported in the literature.

REPORT OF CASE

S. A., a white man aged 47, entered the New York Post-Graduate Hospital Aug. 29, 1945 with a history of malaise, weight loss and increasing constipation of eight months' duration. Two attacks of crampy upper abdominal pain and distention led him to seek medical advice.

The patient was well developed, stocky and slightly obese. Except for slight pallor of the skin and mucous membrane and the presence of moderate tenderness in both upper quadrants of the abdomen, physical examination was negative. A barium colon enema showed an annular defect in the upper part of the descending colon.

Laboratory work-up revealed the red blood count to be 4.39 million with 11.3 Gm. of hemoglobin. The white blood cell count, urinalysis, blood chemistry and electrocardiogram were within normal limits. The erythrocyte sedimentation rate was 51 mm. in one hour.

The patient was prepared for resection with catharsis, colonic irrigations, whole blood transfusions, intravenous amigen and the administration of succinylsulfathiazole. After one week operation was performed. The abdomen was entered through a left rectus muscle splitting incision. One inch distal to the splenic flexure a large annular growth was encountered which was causing nearly complete obstruction. No metastases to liver or regional nodes were evident. The growth, together with a good portion of uninvolved bowel and a wedge of mesocolon, was resected and an aseptic end to end anastomosis performed using the Furniss clamp. Three layers of interrupted cotton sutures were used in making the anastomosis. Five Gm. of sulfanilamide powder was placed without drainage in the abdomen and the abdomen closed in anatomic layers with interrupted number 4 cotton for peritoneum, fascia and skin. The operation was made technically difficult by the patient's stocky, obese habitus, and complete reperitonealization of the left lumbar gutter was not possible.

The operative procedure was well tolerated, but beginning with the second postoperative day the course was stormy, with daily elevations of temperature to 103-104 F. and considerable abdominal pain and distention. On the third postoperative day the patient passed a number of loose stools and considerable flatus. Coupled with these signs of peritonitis he developed evidence of pulmonary consolidation, and full doses of intravenous sodium sulfadiazine and intramuscular penicillin were started, without, however, any noticeable change in the clinical picture.

On the evening of the eleventh postoperative day a grapefruit sized tumefaction suddenly appeared in the left pectoral region which palpation revealed to be a subcutaneous collection of gas. This was limited above by the clavicle, below by the costal margin, medially by the sternum and laterally by the anterior axillary line. The chest had been examined about an hour before, so that it was known definitely that there had been no change in auscultatory or percussion findings. The trachea was in the midline and there was no crepitus of face, neck or arms. The abdomen, however, was still distended and there was crepitus in the left flank just above the anterior superior spine. Nowhere was there any evidence of inflammation in the skin or subcutaneous tissues. Examination of the wound revealed that it was entirely normal. Within a few hours the emphysema had spread to the neck, face, arms and even down to the hands, giving the patient a grotesque Buddha-like appearance.

During the ensuing week his condition became progressively worse and he was irrational at times. On the eighteenth postoperative day the left flank, which for a day or so had seemed slightly inflamed, was noted to be red and indurated. Under pentothal sodium anesthesia, a 6 inch incision down to the transversalis fascia was made and packed wide open. No pus was encountered.

The following day, the distention still being considerable, paracentesis was carried out. When the peritoneum was entered in the epigastric region there was a sudden escape of much fecal smelling gas, with immediate collapse of the entire distended abdomen. Several ounces of thin tan colored fluid also was aspirated. A rubber catheter was inserted for continuous deflation, and 50,000 units of penicillin was instilled every two hours. Therapy with a specific bacteriophage was begun intravenously.

Two days later a fecal fistula developed in the midportion of the operative incision, and at the same time feces was obtained from the drainage tube in the epigastrium, which now communicated directly to the former. From this time on the patient's condition improved and by the twenty-fourth postoperative day he was passing flatus and small amounts of feces by rectum, and while his abdomen showed only moderate distention his facial emphysema had almost disappeared. He was able to leave the hospital on the seventy-fifth postoperative day. At present, six weeks following discharge, there is no drainage and his wound is nearly completely healed.

X-ray studies with contrast mediums prior to his discharge revealed multiple sinus tracts extending from the left iliac area to the epigastrium. Culture of the aspirated abdominal fluid showed nonhemolytic streptococci and Bacillus coli communior. Pathologic examination of the operative specimen revealed the tumor to be a papillary cystadenocarcinoma of the colon. The few lymph nodes in the specimen contained no tumor.

COMMENT

The most common origin of subcutaneous emphysema is known to be the chest and respiratory passages, where it may occur secondary to a lung injury or secondary to pneumothorax spontaneously or artificially produced. It may occur following tracheotomy and even occasionally following operation on the nasopharynx.

Less frequently subcutaneous emphysema originates within the abdomen. Here it may follow traumatic rupture of the hollow viscera or more rarely may occur secondary to spontaneous perforations. Several instances of subcutaneous emphysema accompanying perforated peptic ulcers have been collected by McCorkle and Stevenson,[1] who present an illustrative case together with a review of the literature. The manner in which gas reaches the subcutaneous tissues despite an intact peritoneum is discussed. Similarly a case of subcutaneous emphysema of the scrotum resulting from the perforation of a sigmoid diverticulum is reported by Rankin and Judd.[2]

Gas may also occur in the peritoneal cavity as the result of infection by gas producing organisms. The best example is found in cases of appendical abscess due to a gas forming colon bacillus. Review of the literature, however, revealed only 1 reported instance of subcutaneous emphysema in such a case.[3] This paper unfortunately is not available to us.

Subcutaneous emphysema also occurs, of course, in connection with infection of the subcutaneous tissues by any of the gas forming organisms.

Two cases similar to that being presented have been found in the literature. Baumecker[4] performed a side to side anastomosis between the ascending and the descending colon for inoperable carcinoma of the transverse colon. On the second postoperative day the patient developed emphysema of the abdominal wall, which subsequently spread upward into the neck and down as far as the thighs. On the fifth day postoperatively a fecal (?) fistula appeared, which closed spontaneously nine days later. There was never any elevation in temperature, and Baumecker concludes that the gas originated in a leakage of the anastomosis.

Von Hasselbach[4] records a case of subcutaneous emphysema arising after the performance of a colostomy. There was no evidence of infection, and he believes the gas originated directly from a perforation of the bowel by the needle in suturing.

Baumecker mentions another case in which slight subcutaneous emphysema occurred following laparotomy, due, he feels, to the postoperative leakage from the peritoneal cavity of air admitted at operation. Such leakage could occur, as he suggests, if intra-abdominal pressure was increased by straining or distention, especially if closure had been insecure. We have seen 1 such case in which crepitus was discovered in an apparently clean wound (cultures were negative) on the seventh postoperative day. A sudden temperature rise of obscure cause had occurred which was found at postmortem to be due to a fulminating hepatitis.

In the case herein reported there was obviously a leakage of the anastomosis. Whether the gas was produced by a gas forming colon bacillus in the course of a peritonitis caused by this organism, whether it came directly from the bowel lumen or whether both mechanisms played a part is not clear. We feel that the former explanation most nearly accounts for the clinical findings. The subsequent spread of gas was obviously made possible by the peritoneal defect left at operation.

130 East Seventy-Ninth Street.

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[2] Rankin, Fred W., and Judd, E. Starr: Emphysema of the Scrotum the Result of Diverticulitis of the Sigmoid with Perforation, Surg., Gynec. & Obst. **35**: 310-312 (Sept.) 1922.

[3] Gruca, A.: Occurrence of Gas Edema of Abdominal Wall as Symptom of Acute Phlegmonous Appendicitis, Polska gaz. lék. **12**: 231-232 (March 19) 1933.

[4] Baumecker, H.: Subcutaneous Emphysema Due to Gases from Large Intestine Following Surgery, Zentralbl. f. Chir. **68**: 1741-1742 (Sept. 13) 1941 (comment on von Hasselbach's article).

VISUALIZATION OF OTITIC BRAIN ABSCESS WITH IODIZED OIL

EDWIN J. BLONDER, M.D.
Chicago

Delineation of an otogenic brain abscess by iodized oil is useful in determining the size and shape of the abscess; repeated use would prove an excellent guide to the progress of such an abscess under management.

Review of the effect of lipiodol on brain tissue[1] following lumbar myelography indicated that symptoms or findings the patient may have subsequently could not be related to the retention of the iodized oil in the brain. Evans[2] in 1944 reported the use of 2 cc. of iodized poppy seed oil in a right frontal lobe abscess instilled through a trephine opening. The roentgenogram revealed that the abscess had ruptured to the ventricle. His patient recovered under penicillin. Kahn[3] filled a chronic temporosphenoidal abscess cavity through a trephine with thorium dioxide and obtained a roentgenogram with good filling. Thorium dioxide particles are phagocytosed by cellular elements of the capsule, so that increase in the size of the abscess is indicated in the roentgenogram. Iodized oil on the contrary is not absorbed by the tissue, and in my patient the lipiodol was evacuated within one week, as indicated by the roentgenogram. Kopetzky and Almour[4] used lipiodol to follow fistulas in the petrous bone and in some instances spills were revealed in the cranial cavity. I have been unable to find any reports of an otitic brain abscess filled with an iodized oil through a mastoidectomy.

My patient had a chronic temporosphenoidal abscess that was uncovered following a radical mastoidectomy. One week after

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From the Illinois Eye and Ear Infirmary, University of Illinois, and the Department of Nervous Diseases, Northwestern University Medical School.

[1] Garland, L. H., and Morrissey, E. J.: Intracranial Collections of Iodized Oil Following Lumbar Myelography, Surg., Gynec. & Obst. **70**: 196, 1940. Intracranial Collections of Iodized Oil Following Lumbar Myelography, editorial, Am. J. Roentgenol. **43**: 749, 1940.

[2] Evans, A. L.: The Treatment of Intracranial Infections with Penicillin, J. A. M. A. **124**: 641 (March 4) 1944.

[3] Kahn, E. A.: Treatment of Encapsulated Brain Abscess: Visualization By Colloidal Thorium Dioxide, Arch. Neurol. & Psychiat. **41**: 158 (Jan.) 1939.

[4] Kopetzky, S. J., and Almour, R.: Report on 10 Cases of Suppuration in Petrosal Pyramid, Ann. Otol., Rhin. & Laryng. **44**: 59, 1935.

the operation, about 15 cc. of undiluted lipiodol was instilled in the abscess cavity. Roentgenograms revealed a beautiful filling of the abscess cavity, as can be noted in the reproductions. The lipiodol was evacuated within one week through a large rubber drain, as indicated by subsequent roentgenograms. The patient was discharged from the hospital forty-four days after the operation and was found in good condition on a recent examination.

REPORT OF CASE

A man aged 37 entered the Illinois Eye and Ear Infirmary on June 6, 1943 with a history of bilateral suppurative otitis media since childhood. Shouted voice could not be heard at either concha. A right peripheral facial paralysis had been present for five years. No surgery had ever been performed on either ear. The patient consulted us because of a very severe right temporal pain which was not relieved by medication.

The right ear canal was dry; the drum was almost entirely destroyed, and the middle ear was filled with scar tissue and moist granulations. The left canal was moist, and the drum and middle ear were similar to the right. Spoken voice was not heard in either ear. General physical and neurologic examinations were negative except for the right peripheral facial paralysis The ophthalmologic service reported normal fundi and visual fields. A normal caloric response was obtained with irrigation of both ears with 50 per cent alcohol at 68 F. No spontaneous nystagmus or past pointing was present. The temperature was 98 F., pulse rate 88, respiratory rate 20. The blood count revealed 3,550,000 red cells, 9,900 white cells, polymorphonuclears 72 per cent, lymphocytes 22 per cent, monocytes 1 per cent, eosinophils 2 per cent, hemoglobin 71 per cent. The blood and spinal Wassermann reactions were negative. The roentgenologist reported bony sclerosis of both mastoids, with some absorption on the left, the side opposite the pain.

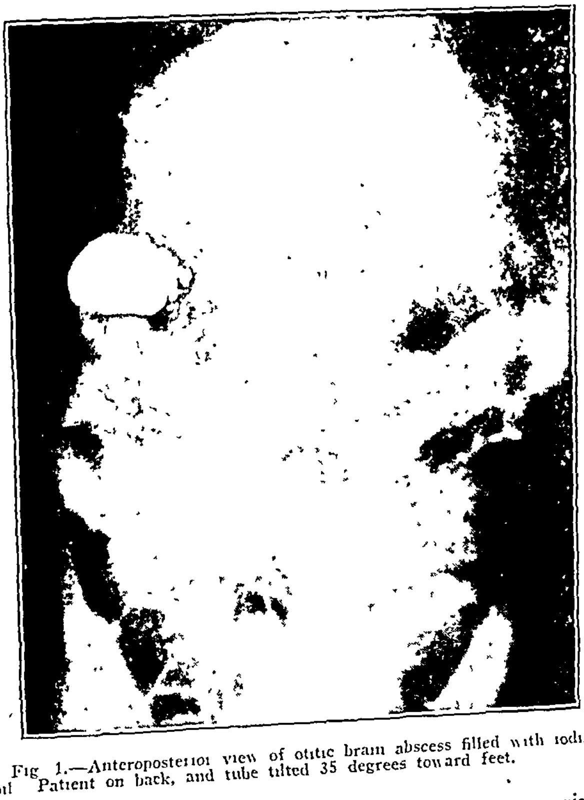


Fig 1.—Anteroposterior view of otitic brain abscess filled with iodized oil Patient on back, and tube tilted 35 degrees toward feet.

Because of the right facial paralysis and the severe right temporal pain in addition to the chronic ear suppuration, a right radical mastoidectomy was performed, followed by opening of the temperosphenoidal abscess through the roof of the attic. The mastoid was sclerotic except for the periantral region and the fistula to the abscess. The attic was cleared of granulations, and the fistula followed to the middle fossa. A sudden gush of brown liquefied pus indicated that the abscess had been reached. Gauze packed in the abscess opening slowed the evacuation of pus to reduce the danger of secondary edema of the brain tissue. A second pack was placed in the mastoid cavity. The wound was permitted to remain open. Sulfonamide therapy was instituted. The contents of the brain abscess were sterile on culture.

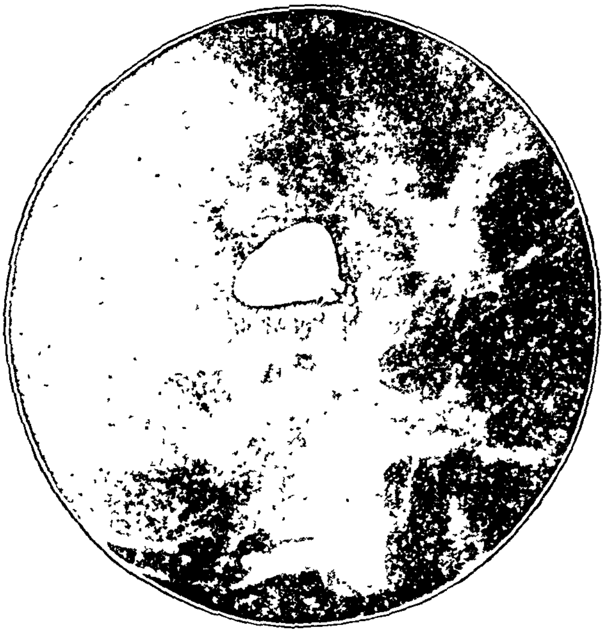


Fig 2.—Lateral view of otitic brain abscess filled with iodized oil. Note the sharp outline.

The abscess was again entered one week later with the patient under a hypnotic. Temperature was 100 F. Both packs were removed. A flexible probe indicated that the abscess cavity was large and had a firm capsule. About 15 cc. of undiluted lipiodol was instilled in the abscess cavity by means of a glass syringe and a silver eustachian catheter. No pressure was used. This procedure was performed on a cart in the operating room. The patient was wheeled immediately to the x-ray room for films. The results were beautiful, showing the abscess cavity well filled. A large soft rubber tube was inserted in the abscess cavity after the films were taken. Many subsequent films were taken to indicate the progress. The roentgenogram demonstrated that the lipiodol was completely evacuated in one week

The patient's temperature returned to normal five days after the lipiodol instillation Rubber drains were changed about every six days. Forty-four days after the operation the patient was discharged from the hospital and has been observed at frequent intervals since. He is a good lip reader and works at pressing clothes.

On March 1, 1945 a complete examination revealed the patient to be in excellent physical condition The ears were dry. No headaches had been present since his discharge from the infirmary. The otoneurologic examination revealed no evidence of a temporosphenoidal abscess. This was confirmed by additional examinations by our neurologist, our ophthalmologic service and a series of roentgenograms

CONCLUSIONS

1. Iodized oil is useful in outlining an established brain abscess.
2. The iodized oil may be of some therapeutic value in the management of an otogenic brain abscess.
3. The use of lipiodol is a safe procedure to use in an established otogenic temporosphenoidal abscess.

25 East Washington Street.

Council on Physical Medicine

The Council on Physical Medicine has authorized publication of the following reports. HOWARD A. CARTER, *Secretary.*

HOLMSPRAY ATOMIZER AND NEBULIZER ACCEPTABLE

Manufacturer: T. J. Holmes Co., Inc., Chartley, Mass.

The Holmspray Atomizer No. 605 is a device for applying medicaments to the nose and throat. It is an all glass atomizer adapted for spraying oils, aqueous solutions and alcoholic solutions, especially designed for disseminating compounds which affect metals or are affected by contact with metals. The device is equipped with a rubber bulb to create pressure and gives a direct, relatively heavy spray.

Holmspray Atomizer No. 605.

The Holmspray Nebulizer No. 630 is different from the Holmspray Atomizer in that it produces a finely disseminated, almost invisible vapor designed to reach more distant parts of the respiratory tract. Like the Atomizer, it is all glass and is designed for compounds which affect metals or are affected by contact with metals. It is equipped with a rubber bulb.

Holmspray Nebulizer No. 630.

The Council on Physical Medicine voted to accept the Holmspray Atomizer No. 605 and the Holmspray Nebulizer No. 630 for inclusion in its list of accepted devices.

BELTONE MONO-PAC HEARING AID ACCEPTABLE

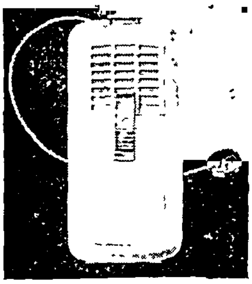
Manufacturer: Beltone Hearing Aid Company, 1450 W. 19th Street, Chicago 8.

The Beltone Mono-Pac Hearing Aid is a three tube instrument with transmitter, amplifier and batteries in one case. A single cord connected to an air conduction receiver is attached to the case.

Physical Dimensions:
- Case: 5½ by 2 9/16 by 1⅛ inches.
- Receiver: Either 1 inch diameter or ¾ inch diameter air conduction crystal (Brush).

Weight:
- Case (containing batteries, transmitter and amplifier): 11¼ ounces.

Current consumption:
- A battery (1½ volts), 60 milliamperes.
- B battery (30 volts), 0.68 milliampere.


Beltone Mono-Pac.

Current drain is independent of volume control setting.

Acoustical gain for pure tones:

	250	500	1,000	2,000	3,000	4,000	5,000 F
Maximum gain, high tone.....	26.5	37.0	49.0	55.0	51.0	37.5	22.0 decibels
Maximum gain, medium tone..	32.0	39.5	51.5	54.0	51.0	36 5	21.0 decibels
Maximum gain, low tone......	29.0	35.0	39.5	49.0	41.5	25.5	8.0 decibels

These values were obtained with the large size crystal receiver (1 inch diameter). The measurements were obtained with an artificial ear. The instrument was mounted on a body baffle. These values do not represent absolute sound pressure values but indicate the amplification efficiency of the hearing aid at the different frequency levels shown. These values are accurate to within plus or minus 3 decibels.

Physical and Mechanical Features: The entire instrument, including batteries, is contained in a single case of black plastic material, rectangular with rounded edges. The combined volume control and "off-on" switch consists of a round knob positioned in an inset at the top of the case. The case is somewhat larger and heavier than the conventional tube hearing aid transmitter and amplifier case, since it also contains the batteries. The total weight, however, is less than that of the conventional instrument which has separate cases for transmitter and batteries.

Performance: This instrument operates in an entirely satisfactory manner. There is a minimum of inherent amplifier, case and cord noise.

The Council on Physical Medicine voted to include in its list of accepted devices the Beltone Mono-Pac Vacuum Tube Hearing Aid.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

PERCOMORPH LIVER OIL (See New and Nonofficial Remedies, 1945, p. 637).

The following additional dosage form has been accepted:

MEAD JOHNSON & COMPANY, EVANSVILLE, IND.

Oleum Percomorphum with Other Fish Liver Oils and Viosterol: 10 cc. bottles.

MANNITOL HEXANITRATE (See New and Nonofficial Remedies, 1945, p. 334).

The following dosage form has been accepted:

E. R. SQUIBB & SONS, NEW YORK

Tablets Mannitol Hexanitrate: 16 mg. and 32 mg.

GOLD SODIUM THIOSULFATE (See New and Nonofficial Remedies, 1945, p. 175).

The following additional dosage form has been accepted:

MERCK & CO., INC., RAHWAY, N. J.

Gold Sodium Thiosulfate: 75 mg. bottles.

THIAMINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1945, p. 610).

The following additional dosage form has been accepted:

MEAD JOHNSON & COMPANY, EVANSVILLE, IND.

Tablets Thiamine Hydrochloride: 5 mg.

BACTERIAL VACCINE MADE FROM HEMOPHILUS PERTUSSIS (See THE JOURNAL, Jan. 5, 1946, p. 31).

The following dosage form has been accepted:

PARKE, DAVIS & CO., DETROIT

Pertussis Vaccine, Immunizing (Sauer): 6 cc. and 24 cc. vials. 15,000 million H. Pertussis per cubic centimeter.

RIBOFLAVIN (See New and Nonofficial Remedies, 1945, p. 614).

The following additional dosage form has been accepted:

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Tablets Riboflavin: 10 mg.

SULFATHIAZOLE SODIUM (See New and Nonofficial Remedies, 1945, p. 213).

The following dosage form has been accepted:

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

Sterile Sodium Sulfathiazole Anhydrous: 5 Gm. ampuls.

ASCORBIC ACID (See New and Nonofficial Remedies, 1945, p. 622).

The following dosage form has been accepted:

MCKESSON & ROBBINS, INC., BRIDGEPORT, CONN.

Tablets Ascorbic Acid: 25 mg., 50 mg. and 100 mg.

THE JOURNAL OF THE
AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MARCH 9, 1946

BOMBING AND HEALTH

During the war opinion varied sharply as to whether or not air bombardment could reduce a nation such as Germany to the point of surrender. Many of the British felt continuance by Germany of its aerial bombardment of September 1940 for a few days longer would have forced Britain to give up. Germany received during the five years of war at least thirty times the weight of high explosives that the Luftwaffe was able to hurl on Britain, and yet surrender came only after formidable land-borne attacks of the United Nations' armored columns.

What effect, then, did air warfare have on the German people? One of the most revealing of all investigations made following V-E day was that of the U. S. Strategic Bombing Survey, which issued (and very promptly) a model report.[1] A team of American scientists, many of them physicians, followed the advancing Allied armies during the closing days of the war, assembling data from health authorities and viewing conditions before the dust of war was settled or the rubble cleared. Most striking was the fact that the health of the German people was not broken even though nearly half of their hospitals and other medical facilities had been destroyed. The state of affairs in the larger cities was hideous, and the most seasoned of the Wehrmacht troops insisted that they would prefer duty on an active battle front to exposure to heavy air bombardment of an industrial area.

The Survey estimates that about 500,000 people were killed during Allied air attacks, and probably four times that number were wounded. In Hamburg during a single month (July 1943) more than 50,000 people were killed, which is considerably more than twice the number of fatalities sustained in the London area throughout the whole war period. The incendiary raids were feared more than those of high explosives, and the cause of death in such raids was generally not burns but rather suffocation. It was estimated at Hamburg that the temperature in a burning block of dwelling houses rose to 1,500 degrees Fahrenheit. In these circumstances air raid shelters became living furnaces, and the frightened occupants frequently emerged naked only to find that they were enveloped on all sides by an even greater heat that quickly suffocated.

A number of disease entities rose sharply during the war period, particularly peptic ulcer, and coronary disease in the younger age groups. Psychiatric breaks were much less frequent than might have been anticipated, perhaps on account of the psychologic stability induced by propaganda. The German birth rate, which was on the increase up to 1939, fell progressively during the war years. Oddly enough, death from cerebral hemorrhage and diabetes decreased during the war years.

Repeated disruption of communications finally had its effect. In April 1945 Professor Karl Brandt, Reich Commissar for Military and Civilian Medicine and Health, informed Hitler that 20 per cent of all essential medical supplies had been destroyed, that 40 per cent of those in stock would not last two months and that the remainder could maintain the country for only four additional months. For his analysis of the situation Brandt was promptly put to death, Der Fuehrer regarding him as defeatist.

URINARY ACID

The body is inherently an acid producing organism. The chemical reaction from which the major portion of metabolic energy is derived, namely the oxidation of carbon, yields a potentially acid product, carbon dioxide. In addition, lactic, beta hydroxybutyric and acetoacetic acids are common side products of metabolism. Furthermore, certain foods, notably proteins and cereals, contribute to the acid produced in bodily economy; in this connection it has been estimated that from 30 to 80 milliequivalents is the magnitude of the excess of acid over base in our daily dietary. The mechanism whereby the acid-base balance is maintained within physiologic limits and the devices for ultimate removal of acid from the body have received much attention. The buffer systems in the blood and extravascular fluids are the first line of defense against a decrease in p_H; the lungs, kidney and skin are involved in the final elimination of acid from the organism. The urine is ordinarily considerably more acid than is the blood; one of the prime functions of the kidney is to excrete acid without the loss of equivalent amounts of base. This organ forms ammonia and substitutes it for base, in combination with the metabolic acids, returning the base to the blood. Also in the distal tubule changes in the phosphates occur which likewise tend to conserve base while metabolic acid is being removed in the urine.

A recent report[1] describes experiments designed to shed further light on the mechanism whereby the urine attains its final acidity in the distal renal tubule. Acidosis was induced in unanesthetized suitably trained laboratory animals, and by the use of data from concomitant blood and urine analyses the glomerular filtration rate was calculated and the total acidity of the urine determined. Under these conditions it was observed that the titratable acidity of the urine was greater than could be accounted for by the change in phosphates with reabsorption of the more alkaline form or by the action of carbonic acid on the phosphate with the reabsorption of bicarbonate. Indeed these two mechanisms accounted for only one fourth to one third of the total acid excreted. The Cornell investigators believe that the observed facts can be explained by a mechanism in which the renal tubular cells take an active part in ion exchange: the transfer of hydrogen ions from the peritubular blood to the urine in the lumen in the tubule and the return of sodium ions from the urine to the blood in the form of bicarbonate. The factor within the cell responsible for catalyzing part of this transfer is probably carbonic anhydrase; this enzyme combines carbon dioxide from the cell metabolism and from the postglomerular blood with water to form carbonic acid, which in turn provides the hydrogen ions for the exchange.

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[1] Enloe, Cortez F., ed.: The Effect of Bombing on Health and Medical Care in Germany, Morale Division, U. S. Strategic Bombing Survey, War Dept., Washington, 1945.

[1] Pitts, R. F., and Alexander, R. S.: Am. J. Physiol. **144**: 239 (July) 1945.

The foregoing suggestions regarding the origin of the acidity of the urine are supported by convincing experimental evidence. A thorough understanding of all aspects of acid-base equilibrium and the factors and mechanisms involved is so important in modern medicine that further corroboration of these carefully considered views will be awaited with interest.

NATIONAL SCIENCE FOUNDATION

Two Senate subcommittees have joined in concurrent reports urging the establishment of a National Science Foundation and reporting on the new National Science bill, S. 1850, which has been perfected jointly by the two subcommittees. The perfected bill is the product of many hearings and conferences between scientists and the members of the subcommittees. The American Medical Association has already announced its support of the general purposes of this legislation, which is designed to permit continuation in the postwar period of the coordinated and intensified research that yielded such magnificent results during the war. The report emphasizes particularly the desirability of extending research in the basic sciences and of overcoming the deficit of competent young investigators in the natural sciences and engineering. Some of the wartime scientific developments, such as our increased knowledge of atomic energy and the development of radioactive isotopes of the common elements, should be helpful to chemists and physiologists in studying living tissues and disease.

Specifically, the report indicates that medical research should be aided, particularly in the investigation of heart disease, diseases of the blood vessels, tuberculosis, arthritis, and nervous and mental diseases. Also cited are the common cold and the aging process in man as areas in which research should be intensified. The subcommittee points out that the by-products of other scientific developments made during the war promise to accelerate medical research.

The report suggests that the Bureau of the Budget and the congressional Committees on Appropriations should approve separate budgets for each of the major divisions of the foundations. President Truman recommended $40,000,000 for the first fiscal year of the operation of the foundation in his 1946 budget message. This appropriation will probably be made when the bill passes, since the Office of Scientific Research and Development discontinues its activities in June. To the medical sciences will be allocated not less than 15 per cent of the funds appropriated for research and development activities.

In the revised measure the use of a full time staff and a part time scientific personnel is provided, the full time staff being charged with the actual administrative responsibilities and the part time staff of nongovernment scientists with the planning and evaluating of all programs of the foundation. In its organization the National Science Foundation is directed by an administrator who consults and advises with a National Science Board on all matters of major policy, program and budget. The board consists of nine members appointed by the President by and with the advice of the Senate from among persons who are especially qualified, plus the individual chairmen of the several divisional scientific committees. Each such scientific committee, as for instance the committee in the division of medical sciences, consists of not less than five and not more than fifteen members who are appointed by the administrator with the advice and approval of the board. These divisional scientific committees elect their own chairmen once they are established.

Among other divisions of the foundation is a division of publication and information to promote the widespread dissemination and utilization of scientific findings. Through this division the foundation is authorized to provide for complete publication together with financial and other assistance to nongovernment scientific journals, to provide aid in the work of translating and abstracting scientific publications and to aid other activities which will make scientific literature more readily accessible to working scientists and other users of scientific information.

The measure provides for the permanence of the National Roster of Scientific and Specialized Personnel. It recognizes the rights of private organizations to such research as they themselves finance. It provides also for strengthening international cooperation by assisting American scientists to participate in international scientific conferences and in the development of specific science projects.

Current Comment

SPECIFICITY OF THE KAHN REACTION

In a recent report McDermott [1] stated that the Kahn standard test has shown a consistent record of 100 per cent specificity in eleven consecutive evaluation studies on tests for syphilis conducted by the U. S. Public Health Service from 1937 to 1945. In these evaluation studies portions of the same "unknown" specimens of blood were submitted to different laboratories for serologic examination. The eleven evaluation studies included the examination of approximately 1,000 cases of tuberculosis, febrile diseases, cancer and other diseases, excluding malaria and leprosy, and slightly more than 1,000 normal persons, making a total of 2,022 cases. These results of the Kahn test should not be interpreted to mean that the test is 100 per cent specific under all conditions. Kahn's interest in perfecting a verification test for the detection of false positive reactions [2] is ample evidence that his test may also give such reactions. Thus, watchfulness is needed to detect false reactions in all seropositive cases in which no clinical or epidemiologic evidence points to syphilis.

DR. MARTHA M. ELIOT—PROPAGANDIST FOR THE CHILDREN'S BUREAU

From the Children's Bureau of the United States Department of Labor comes a newspaper release quoting Dr. Martha M. Eliot as urging a nationwide maternal and child health program because it will offer thousands of opportunities for professionally trained men and women. Of course it will also permit a tremendous expansion of the functions of the Children's Bureau and take away from fathers and mothers the personal responsibility and contacts with their own children that are significant in the American system of living. According to the release, Dr. Eliot said "We have come to accept the fact that the health of the nation's children is as much a public responsibility as their education." To support her propaganda Dr. Eliot cited some figures which are susceptible of misinterpretation; possibly these figures were cited in this manner so that they would be misinterpreted. "In one out of six counties," says Dr. Eliot, "there is only one doctor to 3,000 or more people. Under a good standard there would be one doctor available for every 750 people. In eighty-one counties there is no practicing physician." Dr. Eliot could have added that we had one doctor for every 750 people in the United States before the war but that the voluntary offering of their services by 60,000 physicians to the armed services changed the ratio. Since the United States is the only country in the world that ever had as many as one doctor to every 750 people one wonders on what basis her calculation of a good standard was reached. Dr. Eliot also estimates that we need 48,000 additional public health nurses to advise mothers in their homes about how to care for themselves and their children. She is much disturbed because three out of four counties have no regular monthly maternity clinic where mothers can learn how to prepare for safe childbearing. We were under the impression that the doctor who accepts the responsibility for giving obstetric care to a prospective mother is the proper person to inform her as to how to prepare for safe childbearing. Apparently the Children's Bureau feels that mothers should henceforth obtain this advice from regular monthly maternity clinics. Among the greatest menaces to the American democracy is the technic whereby the bureaucracies in Washington spend a considerable portion of their time and their funds in urging on the American people expansion of the funds and personnel allotted to those bureaucracies.

HOSPITAL PHARMACY

In the modern hospital pharmacy has an important place. Recently Shoemaker, in a discussion of the role of pharmacy in the modern hospital (The Role of Pharmacy in the Modern Hospital, William G. Shoemaker, American Professional Pharmacist, Vol. X, November 1944) emphasized the relationship between the physician and the pharmacist under close association in hospital life. After discussing principles, factors influencing the operation of the pharmacy, its purpose and its relation to the use of drugs, the pharmacy committee, records, files and the business office, he concludes that the advantages of a well supervised pharmacy "are greatly appreciated by those who benefit from and come in contact with the problems of medicine." He urges closer cooperation between the physician and the pharmacist in supplying quality drugs and making use of the newer therapeutic measures. The most progressive hospital pharmacies include proper organization and thorough understanding of the part which the pharmacy plays in hospital life. Hospital boards need to modernize and equip the hospital pharmacy properly. Such improvements yield economic and social benefits.

NEW JOURNAL ON BLOOD

A new bimonthly publication, *Blood*—The Journal of Hematology, has just appeared. The selection of William Dameshek as editor in chief, of George R. Minot as consulting editor and of a staff of associates and assistant editors composed of the representative hematologists of this country augurs well for its future. The first issue contains, among others, a contribution by Edwin J. Cohn on the composition, function and clinical uses of blood, a contribution by Charles A. Doan and Claude-Starr Wright on primary congenital and secondary acquired splenic panhematopenia and one by George R. Minot and his associates on differentiation of pernicious anemia and certain other macrocytic anemias by the distribution of red blood cell diameters. An American journal devoted exclusively to the problems of the diseases of the blood is sure to be received with enthusiasm.

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[1] McDermott, Elizabeth B.: The Specificity of the Kahn Reaction in Eleven Consecutive Evaluation Studies on Tests for Syphilis, Univ. Hosp. Bull., Ann Arbor **11:** 90 (Nov.) 1945.

[2] Kahn, R. L.: A Serologic Verification Test in the Diagnosis of Latent Syphilis, Arch. Dermat. & Syph. **41:** 817 (May) 1940; Technic of the *Standard Kahn Test and of Special Kahn Procedures*, Ann Arbor, Mich., University of Michigan Press, 1944, p. 31.

NATIONAL HEALTH PROGRAM OF THE AMERICAN MEDICAL ASSOCIATION

Adopted by the Board of Trustees and the Council on Medical Service, Feb. 14, 1946

1. The American Medical Association urges a MINIMUM STANDARD OF NUTRITION, HOUSING, CLOTHING AND RECREATION as fundamental to good health and as an objective to be achieved in any suitable health program. The responsibility for attainment of this standard should be placed as far as possible on the individual, but the application of community effort, compatible with the maintenance of free enterprise, should be encouraged with governmental aid where needed.

2. The provision of PREVENTIVE MEDICAL SERVICES through professionally competent health departments with sufficient staff and equipment to meet community needs is recognized as essential in a health program. The principle of federal aid through provision of funds or personnel is recognized with the understanding that local areas shall control their own agencies as has been established in the field of education. Health departments should not assume the care of the sick as a function, since administration of medical care under such auspices tends to a deterioration in the quality of the service rendered. Medical care to those unable to provide for themselves is best administered by local and private agencies with the aid of public funds when needed. This program for national health should include the administration of MEDICAL CARE, INCLUDING HOSPITALIZATION TO ALL THOSE NEEDING IT BUT UNABLE TO PAY, such medical care to be provided preferably by a physician of the patient's choice with funds provided by local agencies with the assistance of federal funds when necessary.

3. The procedures established by modern medicine for advice to the prospective mother and for ADEQUATE CARE IN CHILDBIRTH should be made available to all at a price that they can afford to pay. When local funds are lacking for the care of those unable to pay, federal aid should be supplied with the funds administered through local or state agencies.

4. The child should have throughout infancy PROPER ATTENTION, INCLUDING SCIENTIFIC NUTRITION, IMMUNIZATION AGAINST PREVENTABLE DISEASE AND OTHER SERVICES INCLUDED IN INFANT WELFARE. Such services are best supplied by personal contact between the mother and the individual physician but may be provided through child care and infant welfare stations administered under local auspices with support by tax funds whenever the need can be shown.

5. The provision of HEALTH AND DIAGNOSTIC CENTERS AND HOSPITALS necessary to community needs is an essential of good medical care. Such facilities are preferably supplied by local agencies, including the community, church and trade agencies which have been responsible for the fine development of facilities for medical care in most American communities up to this time. Where such facilities are unavailable and cannot be supplied through local or state agencies, the federal government may aid, preferably under a plan which requires that the need be shown and that the community prove its ability to maintain such institutions once they are established (Hill-Burton bill).

6. A program for medical care within the American system of individual initiative and freedom of enterprise includes the establishment of VOLUNTARY NONPROFIT PREPAYMENT PLANS FOR THE COSTS OF HOSPITALIZATION (such as the Blue Cross plans) and VOLUNTARY NONPROFIT PREPAYMENT PLANS FOR MEDICAL CARE (such as those developed by many state and county medical societies). The principles of such insurance contracts should be acceptable to the Council on Medical Service of the American Medical Association and to the authoritative bodies of state medical associations. The evolution of voluntary prepayment insurance against the costs of sickness admits also the utilization of private sickness insurance plans which comply with state regulatory statutes and meet the standards of the Council on Medical Service of the American Medical Association.

7. A program for national health should include the administration of MEDICAL CARE, INCLUDING HOSPITALIZATION, TO ALL VETERANS, such medical care to be provided preferably by a physician of the veteran's choice, with payment by the Veterans Administration through a plan mutually agreed on between the state medical association and the Veterans Administration.

8. RESEARCH FOR THE ADVANCEMENT OF MEDICAL SCIENCE is fundamental in any national health program. The inclusion of medical research in a National Science Foundation, such as proposed in pending federal legislation, is endorsed.

9. The services rendered by VOLUNTEER PHILANTHROPIC HEALTH AGENCIES such as the American Cancer Society, the National Tuberculosis Association, the National Foundation for Infantile Paralysis, Inc., and by philanthropic agencies such as the Commonwealth Fund and the Rockefeller Foundation and similar bodies have been of vast benefit to the American people and are a natural outgrowth of the system of free enterprise and democracy that prevail in the United States. Their participation in a national health program should be encouraged, and the growth of such agencies when properly administered should be commended.

10. Fundamental to the promotion of the public health and alleviation of illness are WIDESPREAD EDUCATION IN THE FIELD OF HEALTH and the widest possible dissemination of information regarding the prevention of disease and its treatment by authoritative agencies. Health education should be considered a necessary function of all departments of public health, medical associations and school authorities.

MEDICINE AND THE WAR

ARMY

WOMEN'S ARMY CORPS MEMBERS URGED TO REMAIN IN SERVICE

The War Department recently announced a program to encourage members of the Women's Army Corps to remain in service beyond their date of eligibility for separation to meet the critical shortage of skilled personnel in army hospitals, personnel centers and headquarters installations. In a directive to commanders of installations in this country and overseas, the War Department urged them to make every effort to encourage WAC officers and enlisted women to remain in service. The directive said:

"Owing to the critical shortage of skilled personnel available, it is desired that every effort be made to encourage personnel of the WAC with usable skills to volunteer for retention in the service. There is a critical requirement for skilled personnel in personnel centers, hospitals and headquarters installations. WAC volunteers whose skills cannot be utilized by the service in which they are serving will be encouraged to volunteer for service in another force. WAC volunteers may indicate a desire for overseas service, and such assignment will be made if feasible. However, no definite commitment for overseas service for WAC personnel can be made at this time."

The War Department also announced provisions whereby honorably discharged former enlisted Wacs may seek reentry into the service. Certain conditions exist for reentry:

1. Volunteers for reentry into the service must submit application in writing to the Adjutant General, Washington, D. C.
2. Volunteers for reentry into the service must volunteer either for the duration of the war plus six months or until Sept. 30, 1946, unless sooner relieved for the convenience of the government.
3. Volunteers must be between the ages of 20 and 50 years.
4. Volunteers must waive all rights to discharge because of marital status or age.
5. Volunteers must possess a skill usable by the War Department or a major continental force.
6. Volunteers will be accepted in the grade held at the time of discharge.
7. The duty assignment will be as directed by the War Department.

NEW DIRECTOR OF SANITATION AND SANITARY ENGINEERING

Lieut. Col. John W. Regan, assistant director of the Sanitation and Sanitary Engineering Division, Preventive Medicine Service, was recently appointed director of that division, succeeding Col. William A. Hardenbergh. Colonel Regan graduated from Harvard Medical School, Boston, in 1936 and entered the regular army in 1940.

ARMY AWARDS AND COMMENDATIONS

Major Herman L. Taft

Major Herman L. Taft, formerly of North Bergen, N. J., was recently awarded the Bronze Star for meritorious achievement in operations against the enemy on Mindanao in the Philippines. An accompanying citation disclosed that Major Taft, during the period from April 27 to July 5, 1945, as chief of the orthopedic section in an evacuation hospital, "worked diligently and tirelessly to provide his patients with the best possible care. During this period it was necessary to expand the hospital 50 per cent above its normal capacity. Among the battle casualties were a great number of serious orthopedic cases. By his superior surgical ability, his exercise of good judgment and his painstaking and serious thought he produced excellent results, saving many lives and limbs and preventing permanent disabilities. The example set by this officer and the results of his efforts were an inspiration to all who came in contact with him. His service during the Mindanao operation reflects great credit on himself, his profession and the military service." Dr. Taft graduated from Columbia University College of Physicians and Surgeons, New York, in 1929 and entered the service Aug. 18, 1942.

Colonel George G. Durst

The Bronze Star was recently awarded to Col. George G. Durst, formerly of Greenwood, S. C., "for meritorious service in connection with military operations as chief surgeon, Ground Force Reinforcement Command, and medical adviser to commanding general, Ground Force Reinforcement Command, European Theater of Operations, from Nov. 17, 1943 to May 3, 1945. Colonel Durst demonstrated broad professional and military knowledge in disseminating policies and definition concerning physical standards to be followed in declaring personnel limited assignment. By his alertness and constant insistence on proper medical screening he made sure that reinforcements passing through this command were in top physical condition prior to assignment to combat units. Colonel Durst's outstanding performance and devotion to duty contributed materially to the success of the war effort and reflect great credit on himself and the armed forces of the United States." Dr. Durst graduated from the Medical College of the State of South Carolina, Charleston, in 1937 and entered the service Jan. 1, 1941.

Lieutenant Colonel Oscar Eugene Nadeau

The Legion of Merit was recently awarded to Lieut. Col. Oscar E. Nadeau, Chicago, for outstanding work as medical officer in charge of the Fletcher General Hospital, Cambridge, Ohio. The citation accompanying the award read: "Colonel Nadeau's professional capacity and administrative ability were evidenced by the efficiency and high standards with which the surgical section functioned when peak numbers of the sick and wounded were hospitalized. From the date of activation to the cessation of hostilities, there was no surgical death recorded at this hospital, an achievement symbolizing the skill, resourcefulness and high level of care Colonel Nadeau provided for patients at Fletcher General Hospital." Dr. Nadeau graduated from Rush Medical College, Chicago, in 1913 and entered the service Oct. 1, 1942.

Captain Granville W. Larimore

The Army Commendation Ribbon was recently presented to Capt. Granville W. Larimore, chief of the Health Education Unit, Preventive Medicine Service, Office of the Surgeon General, for his work on control of venereal diseases at the Army Air Forces Southeast Training Center, Maxwell Field, Alabama. Dr. Larimore graduated from Rush Medical College, Chicago, in 1936. He entered the army from the Medical Reserve Corps in June 1942. Dr. Larimore is also the recipient of the Legion of Merit for his work in the Office of the Surgeon General.

Captain Peter Volpe

Capt. Peter Volpe, Columbus, Ohio, was recently awarded the Bronze Star for meritorious service as medical corps executive officer with the 76th Armored Medical Battalion. He received the award for action in France, Luxembourg and Belgium from December 1944 to February 1945, when, "by his courage, technical skill and outstanding devotion to duty he aided materially in the rapid evacuation of casualties and the saving of the lives of many American soldiers." Dr. Volpe graduated from the Ohio State University College of Medicine, Columbus, in 1931 and entered the service Sept. 4, 1942.

MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

Alabama

Forney, John Mc	Tuscaloosa
Galbraith, James G	Birmingham
Givhan, Edgar G. Jr	Birmingham
Hankins, Gordon M	Birmingham
Hubbard, Leslie H	Wilton
Kimmey, John M	Anniston
McCafferty, Emit L. Jr	Mt. Vernon
Morton, Benjamin F	Birmingham
O'Keefe, James P	Birmingham
Roberts, Mack J	Mobile
Smith, Henry R	Birmingham

Arizona

Callander, Russell J	Tuscon
Carrell, William D	Tuscon
De Pinto, Angus J	Phoenix

Arkansas

Baldridge, Max	Conway
Bee, James E	Mission
Bounds, Joseph B	Little Rock
Compton, Neil E	Fayettville
Cook, Raymond O	Little Rock
Dean, Gilbert O	Little Rock
Dean, Lee A	De Queen
Foltz, Thomas P	Fort Smith
Jones, William J	Lanoke
Paddock, Charles S	Fayetteville
Roberts, John N	Little Rock
Stroud, Paul T	Jonesboro

California

Abelson, Sol M	Los Angeles
Andrews, Herbert J	Los Angeles
Bachhuber, Robert G	Los Angeles
Bacon, Lyle C	Pasadena
Badertacher, Victor A	San Francisco
Barr, James A	Piedmont
Barton, Edward, W., Jr	San Gabriel
Beadner, Sol A	San Diego
Bellamy, Donald F	Oakland
Benbrook, Samuel P	Beverly Hills
Billig, Harvey E. Jr	Hollywood
Boe, Max R	Alameda
Bogart, William M	Oakland
Borley, William E	Coronado
Bowman, Ernest R	San Francisco
Boyer, Kenneth H	N. Hollywood
Brady, John H	Visalia
Brink, Holden E	Santa Rosa
Brodovsky, Daniel	San Jose
Brown, Albert L	San Francisco
Brown, John L	San Francisco
Budge, Edwin S. Jr	Los Angeles
Burleigh, John S	Los Angeles
Caldemeyer, Everett S	Los Angeles
Carson, Andrew B	Oakland
Carson, Donald A	San Francisco
Collis, William H. L	Stockton
Cushman, Glen F	San Francisco
Cutshaw, Charles M	Brawley
Dallas, Donald A	San Francisco
Dassett, Joseph W	Whittier
Dau, Neil J	Fresno
Dietrich, Harry F	Los Angeles
Dixon, Chester D	Santa Monica
Dixon, Henry L	Lynwood
Donaldson, Lincoln B	Palo Alto
Downing, Francis H	Fresno
Eldredge, Horace S	Los Angeles
Ellwood, Paul M	Oakland
Ervin, Edmund N	Mill Valley
Ewer, John N	Piedmont
Farr, Walter H	Salinas
Fisher, Gaylord L	Long Beach
Fountain, William E	Mercer
French, Richard L	Los Angeles
Garland, Leo H	San Francisco
Gates, Russell G	Santa Barbara
Gibbons, Ross M	Vallejo

California—Continued

Gleason, Aurelius L	Oakland
Gorham, Frank W	San Francisco
Grant, Leslie C	Inglewood
Greenwood, Charles F	Piedmont
Haft, Stanley S	Los Angeles
Harr, Ralph V	Santa Rosa
Harris, Thomas L	Los Angeles
Hart, Melvin G	Oakland
Hauck, Richard F	Los Angeles
Henry, John R	Oakland
Higgins, Laurie W	San Diego
Holcomb, William F	Oakland
Horwitz, Harry	Oakland
Huenergardt, Howard A	Oakland
Hyman, Earl	Los Angeles
Jackson, John L	Los Angeles
Johnson, Franklyn H	Los Angeles
Johnson, Hilding R	Sacramento
Johnson, Paul A. G	La Jolla
Jones, Milton R	Claremont
Kaven, Henry A	Oakland
Kilgus, John H	San Francisco
Kinzer, Everett E	San Marino
Kirby, Harry W. B	Los Angeles
Lamb, Woodburn K	Oakland
Langley, Robert W	Los Angeles
Larkey, Jefferson	Oakland
Lawler, William H	Salinas
Lorenz, George Jr	Glenside
Ludden, Jerome A. Jr	Watsonville
Lund, Le Val	Los Angeles
Lynn, William F	Altadena
Mackenzie, Alexander S. G	Burlingame
MacPherson, John D	San Diego
Maddox, John D	Coronado
Maisler, Sol	San Francisco
Mather, Ralph W	Los Angeles
Matzer, Edward	San Francisco
Mayers, Morton M	Glendale
Meherin, Joseph M	San Francisco
Mehlin, George B	San Diego
Meisburger, Richard G	Los Angeles
Milton, James T	San Diego
Murray, William H. T	Santa Monica
Nagle, John M	San Francisco
Needles, Louis J	Hollywood
Newman, Henry W	Belvedere
Newton, Miram D	Le Mesa
Novy, Frederick G., Jr	Berkeley
O'Connor, Joseph P	Pasadena
Oliver, Wrenshall A	San Francisco
O'Neill, Thomas J	Los Angeles
Overmyer, J. W	San Jose
Paul, Sarkis B	San Francisco
Pier, Harry McKay	Oakland
Reeves, James E	San Diego
Reid, Richard H	Toulumne
Reynolds, Theodore E	Piedmont
Riskind, Lester A	Beverly Hills
Roberts, Gilbert J	Claremont
Rosenblum, Harold H	San Francisco
Roy, Gustave A	San Diego
Scarlett, Samuel L	San Francisco
Schlappi, John C	San Diego
Schlumberger, Frederick C	Los Angeles
Scobee, James E	San Francisco
Seitter, Paul F	San Fernando
Shackford Bart. C	Palos Verdes Ests.
Sharpsteen, Jay R	Piedmont
Shaw, Gerald W	Los Angeles
Siefert, John L	Berkeley
Silton, Maurice Z	Los Angeles
Smith, Gregory	San Francisco
Smith, James B	San Francisco
Sorauf, Bernard M	Fresno
Stallone, Jasper J	Berkeley
Stevens, Joseph B	Los Angeles
Stevenson, Charles C	Piedmont
St. Geme, Joseph W	Los Angeles

California—Continued

Stimson, Clement A	Petaluma
Stratton, James M	Berkeley
Sumner, William A	San Francisco
Susnow, David A	San Francisco
Swengel, Winton F	Pacific Grove
Szurek, Stanislaus A	San Francisco
Tanton, Harry A	Los Angeles
Taylor, Edwin M	Piedmont
Thomas, William M	Palo Alto
Thomason, Sidney D	Claremont
Tillman, Carl-Gustaf Didrik	Belmont
Toffelmier, Douglas D	Oakland
Toller, Rudolph B	Stockton
Trombley, Robert A	San Diego
Turkel, Abraham W	San Francisco
Van Cott, Wesley B	Los Angeles
Vogelman, Jack G	San Jose
Wadsworth, Elmer E. Jr	Alhambra
Wagner, Richard J	San Francisco
Wallerious, Raymond M	Sacramento
Walthall, Felix E	Bakerfield
Weatherman, Harold V	San Diego
Williams, Joseph B	Culver City
Winnard, Wellington, F. R	Los Angeles
Wood, Otho T	San Francisco

Colorado

Buck, George R	Denver
DeOnier, Carl W. H	Denver
De Roos, John J	Denver
Hamilton, Lester L	Springfield
Tucker, Warren W	Denver
Wyatt, Kon	Denver
Savage, Raymond J	Denver

Connecticut

Arnold, Herman B	Woodbridge
Bernstein, Dwight J	New Britain
Harris, Benedict R	Hamden
Hubert, Gilbert R	Torrington
Parshley, Philip F	Hartford
Irwin, Harold H	New London
Murphy, Charles A	Stamford
Stygar, Joseph S	Derby
Wilcox, Frederick C. Jr	Hamden

Delaware

Heck, Alfred L	Wilmington

District of Columbia

Caulk, Ralph M	Washington
Coffey, Robert J	Washington
Cohen, Maynard I	Washington
Connolly, Alysius J. B	Washington
Downey, Harold R	Washington
Duff, Alexander McGill Jr	Washington
Klein, Elmer	Washington
Nicklas, Edward W	Washington
McNamara, Alexander	Washington
Lebensohn, Zigmond M	Washington
O'Donnell, Paul J	Washington
O'Keefe, James A	Washington
Zylman, Jacob D	Washington

Florida

Blum, Otto S	Miami
Boettner, Julius F	Fort Lauderdale
Clarholm, Victor	Palm Beach
Collins, Grover C	Gainesville
Hagwood, John D	Clearwater
Harris, Robert M	Miami
Marcus, Nathan L	Tampa
Rubens, Eli	Fort Pierce
Shallow, Bernard H	Key West

Georgia

Andrews, Charles R. Jr	Canton
Baird, James M	Columbus
Blum, Leo J. Jr	Macon
Burleigh, Bruce D	Augusta
Crawford, Hugh	Toccoa

MEDICAL OFFICERS RELEASED BY THE NAVY

Georgia—Continued

Dunn, James G	Blakeley
Edwards, William T. Jr	Decatur
Field, Charles H	Macon
Fowler, Clarence D	Atlanta
Gershon, Nathan I	Atlanta
Hahne, Leonard J	Savannah
McDaniel, James G	Atlanta
Morrison, Howard J	Savannah
Norman, Lewis G. Jr	West Point
Seymour, Glenn E	Albany
Sims, George P	Columbus
Smith, Charles M	Atlanta
Thomas, Frank E	Albany
Tye, James P	Albany
Willcox, William D	Fitzgerald

Idaho

Anderson, Vern H	Buhl
Beymer, Charles B	Twin Falls
Chaloupka, Howard M	Boise
Crockett, Kenneth A	Preston
Cutler, Morton	Preston
Fuendeling, Mervyn J	Twin Falls
Hatch, John S	Idaho Falls
Howard, Forrest H	Shoshone
Jones, Everett N	Boise
Loehr, Doyle M	Moscow
Moritz, John R	Sun Valley
Morton, Herschel B	Coeur D'Alene
Rees, Ellwood T	Twin Falls
Shaw, Manley B	Boise
Thompson, Luther C	Gooding

Illinois

Ashby, John S	Millbrook
Ashley, Paul	Chicago
Balcke, Louis A	Pekin
Ball, Orrie H., Jr	Bloomington
Barth, Earl E	Chicago
Bennett, David A	Canton
Bergstrom, Paul L	Kirkland
Bond, Clinton S	Rochelle
Brown, Hyman N	Chicago
Bussey, Frederick N	Chicago
Carey, James H	Joliet
Chor, Herman	Chicago
Clancy, Edward J	Chicago
Cronin, John J. Jr	River Forest
Crowley, Edward X	Chicago
De Lozier, Leonard C	Peoria Heights
Dilts, Preston V	Pittsfield
Ditkowsky, Samuel E	Chicago
Droegemueller, Edmund H	Elmhurst
Edinburg, Jack J	Chicago
Evans, Edward G	Aurora
Flack, Clarence E	River Forest
Fox, Theodore A	Chicago
Freriks, Dick J	La Grande
Friedell, Morris T	Chicago
Geer, Paul I	Cicero
Gowdy, Franklin K	Glencoem
Hamilton, Eugene G	Jacksonville
Hamilton, Gene C	Chicago
Harter, Joseph A	Chicago
Hausman, Charles M	Chicago
Hepner, Paul E	Danville
Johnson, John R	Chicago
Kearney, James F	Chicago
Kearns, Jerry J	Chicago
Laury, Everett M	Chicago
Lederer, Francis L	Chicago
Lengyel, Carl E	Lincoln
Long, Hugo	Chicago Heights
Lutz, Jacob F	Chicago
Lynn, Lawrence W	Chicago
Mastri, Aquil	Chicago
McGuinness, George A	Chicago
Monaco, Joseph T	Oak Park
Montgomery, Burtis E	Harrisburg
Nerger, Vernon D	Oak Park
Newman, Louis B	Chicago
Nourie, Raymond L	Kankakee

Illinois—Continued

Parratt, Louis W	Chicago
Patterson, John B	Beardstown
Peterson, Philip L	Brookfield
Petri, Kenneth N	Peoria
Pollock, Frederic J	Chicago
Poticha, Joseph S	Chicago
Price, Robert G	Bloomington
Rosenberg, David H	Chicago
Ross, Charles A	Galesburg
Ryan, Harry E	Centralia
Rottschafer, Henry W	Berwyn
Schick, Charles M	Belleville
Schriver, J. Stanley	Chicago
Schroeder, John H	Waukegan
See, William B	Chicago
Shronts, John F	Woodstock
Siegert, Frederick W	Pana
Smith, Lymon W	Barrington
Smith, Winston W	Gurnee
Spafford, Howard E	DeKalb
Steigmann, Frederick	Chicago
Steiner, Clifford J	Chicago
Van Ness, Edwin B	Normal
Ward, Edward J	Peoria
Ward, James A	Metropolis
Waters, Harvey C	Oak Park
Wyman, John F	Chicago

Indiana

King, Joseph W	Anderson
Weaver, William W	New Albany
Wilson, Leslie	Ft. Wayne
Brown, Wendell E	Indianapolis
Dunlap, David L	South Bend
Hays, Everett L	Indianapolis
Henry, Russell S	Indianapolis
Hoppenrath, Wesley M	Elwood
Jackson, John K	Aurora
Johnson, George M	Indianapolis
Popp, Milton F	Fort Wayne
Rendel, Donald T	Hammond
Robertson, William S	Spiceland
Selby, Keith E	South Bend
Thayer, Benet W	North Vernon

Iowa

Bates, Maurice T	Des Moines
Bisgard, Carl V	Harlan
Buchanan, John J	Milford
Callahan, George D	Iowa City
Chase, William B. Jr	Des Moines
Dawson, Emerson B	Fort Dodge
Edwards, Charles V	Council Bluffs
Fail, Charles S. Jr	Adel
Floersch, Eugene B	Council Bluffs
Foley, Thomas H	Dubuque
Grau, Amandus H	Denison
Gross, Alvin J	Harlan
Hennessy, James D	Council Bluffs
Hibbs, Donald K	Ames
Kelberg, Melvin R	Iowa City
Klocksiem, Roy G	Des Moines
Marquis, George S	Des Moines
Mast, Truman M	Washington
Miller, Donald F	Williamsburg
Murphy, James H	Des Moines
Nagyfy, Stephen F	Iowa City
Newman, Robert W	Iowa City
Norment, John E	Clinton
Noun, Louis J	Des Moines
Osborn, Clarence R	Dexter
Phillips, Allan B	Clear Lake
Smith, Carl W	Dubuque
Smith, Harold F	Iowa City
Sohm, Herbert A	Des Moines
Springer, Floyd A	Des Moines
Stevenson, William W	Rockwell City
Strauss, Eugene C	Waterloo
Towle, Robert A	Iowa City
Trunnell, Thomas L	Waterloo
Whitehouse, William N	Ottumwa
Wirtz, Dwight C	Des Moines

Kansas

Anderson, Severt A	Morganville
Barr, John F	Ottawa
Bitzer, Donald A	Washington
Brown, John A. III	Washington
Carr, Robert M	Junction City
Collins, Thomas R	Emporia
Danielson, Arthur D	Herington
Davis, David R	Emporia
Donnell, Louis A	Wichita
Fernie, Robert W., Jr	Hutchinson
Helwig, George F	Topeka
Hertzler, John W	Newton
Hibbard, James S	Wichita
Hill, James E	Wellington
Hinton, Elmer E	Hiawatha
Holter, Harold V	Kansas City
Irby, Addison C	Fort Scott
Jeffries, Robert C	Atchison
Jones, Richard C	Sterling
Kerr, Richard K	Lincoln
Krehbiel, Bertrand I	Topeka
Muller, Samuel B	Overland Park
O'Donnell, Harold F	Wichita
Pyle, Lucien R	Topeka
Read, William T	Coffeyville
Rettenmaier, Albert J	Kansas City
Robinson, Edgar L	Lawrence
Spencer, Harold F	Garnett
Stitt, Paul L	Hardtner
Wallen, James E	Ottawa
Wier, Charles K	Wichita
Wildgren, Bernard C	Hoisington

Kentucky

Banks, Duane E	Louisville
Barnes, Kenneth L	Princeton
Craddock, James E	Louisville
Faulkner, Charles R	Mt. Sterling
Hamilton, Richard A	Springfield
Hunter, Robert G	Mt. Sterling
Pauli, Augustus J	Louisville
Savage, William M	Maysville
Smith, William P	Corbin
Sparks, Clyde C	Ashland
Williams, Frederick M	Louisville

Louisiana

Baker, Sidney F	Shreveport
Christman, Ralph J	New Orleans
Custer, Jasper L	Shreveport
Faust, Frank L	New Orleans
Ferguson, Benjamin W	Shreveport
George, Jackson S	Laplace
Gladney, Thomas Y	Baton Rouge
Keller, Clifford La Dore	Church Point
Miller, David S	Baton Rouge
Pruitt, Alton R	Cheneyville
Ridgeway, Elmer, Jr	New Orleans
Riggs, Ralph H	Shreveport
Robinson, Lewis S. Jr	New Orleans
St. Martin, Eugene C	Houma
Tedder, James W	New Orleans
York, Justin O	New Orleans

Maine

Bernard, Albert J	Skowhegan
Coffin, Raymond B	Portland
Daniels, Donald H	S. Portland
Gidman, Francis T	Rumford
Hill, Allen M	Monset
Leighton, Wilbur F	Portland
Springer, Frank L	Farmington

Maryland

Battaglia, Dominic T	Baltimore
Cohen, Robert A	Towson
Doeller, Charles H. Jr	Baltimore
Futcher, Palmer H	Baltimore
Harris, Aaron	Baltimore
Hodes, Horace L	Baltimore
Kallins, Edward S	Baltimore
MacGowan, Birkhead	Baltimore
Rinne, John I. Jr	Annapolis

MEDICAL OFFICERS RELEASED BY THE NAVY

Maryland—Continued

Rozum, John K.	Cumberland
Ruzicka, Edwin R.	Baltimore
Trevaskis, Richard W. Jr.	Cumberland
Waters, Zack J.	Baltimore
Young, Asa D.	Baltimore

Massachusetts

Albert, Samuel M.	Beverly
Beck, James S. P.	Shrewsbury
Benson, Harry L.	Winchester
Bergin, Paul F.	Worcester
Bixby, Harry I.	Brookline
Bourke, Robert W.	Walpole
Brailey, Allen G.	Newton Highlands
Brown, Byron F.	Hopedale
Burnham, Leon R.	Lynn
Carnicelli, Thomas J.	Framingham
Carson, Parker C.	Longmeadow
Cartier, Roland R.	Rutland
Collins, Gerald M.	Weymouth
Curtiss, David P.	Williamstown
Dawson, William E.	Taunton
Derow, Sidney	Boston
Derrick, Charles C.	Stockbridge
Doyle, Joseph B.	Boston
Dunlop, George R.	Worcester
Fagan, John F. Jr.	Boston
Fielding, Bennett I.	Worcester
Fletcher, Kenneth S.	Chicopee
Forbes, Alexander	Milton
Forsley, Edward T.	Lenox
Fothergill, LeRoy D.	Lexington
Gauld, Archibald G.	Cohasset
Giesen, Joseph H.	Brighton
Glidden, Henry S.	Tewksbury
Goodale, Raymond H.	Worcester
Gorman, Richard J.	Wichenden
Grush, Herman B.	Beverly
Hamlin, Hannibal	Weston
Hardy, Irad B. Jr.	Waltham
Hayes, John J. Jr.	Boston
Hazard, Sprague W.	Rehobeth
Herrick, Charles A.	Manchester
Hight, Donald	Worcester
Hook, William G.	Danvers
Houghton, John D.	Brookline
Hudson, Henry W.	Waban
Hunt, Richard J.	Stoneham
Leary, Gerald C.	Lawrence
Leighton, Herbert T.	Brookline
Levine, Saul C.	Malden
Lewis, James P.	Brookline
Lynch, George W.	Woburn
Lyons, George H.	Boston
Mabrey, Roy E.	Boston
McGinn, Sylvester	Newton Center
Menzies, Marshall M.	Westfield
Messier, Paul E.	Worcester
Peterson, Thomas H.	Newton Center
Poland, Warren M.	Gloucester
Reilly, Thomas F.	Springfield
Russman, Benjamin	W. Somerville
Sanborn, Frederick	Winchester
Schwartz, Louis N.	Dorchester
Sewall, Kenneth W.	Boston
Shippen, Eugene R. Jr.	Melrose
Silverman, Irving	Revere
Smead, James L.	Springfield
Solomon, Philip	Brookline
Sternstein, Herman J.	Chestnut Hill
Stockwell, Frank W.	Newburyport
Suchnicki, Emil F.	New Bedford
Swan, Charles L., Jr.	Stoughton
Tisdale, Eben D.	Taunton
Tolman, Maurice M.	Chelsea
White, Thomas P.	Newton
Wisner, Frank B.	Ludlow
Wood, Harold	Clinton
Wyman, Edward R.	Great Barrington

Michigan

Adams, Frederick M.	Birmingham
Bald, Frederick W.	Flint
Balyeat, Gordon W.	Grand Rapids

Michigan—Continued

Barker, Vincent L.	Monroe
Beam, Arthur D.	Grosse Pt.
Berg, Lawrence "A"	Sturgis
Bishop, Harry M.	Saginaw
Brines, Osborne A.	Detroit
Brink, James R.	Grand Rapids
Brown, John R.	Marine City
Brown, Rolland J.	St. Joseph
Clark, Benjamin W.	Grosse Pt. Park
Cooper, Robert J.	Pontiac
Coventry, Mark B.	Detroit
Crane, Harold D.	Grand Rapids
Crowell, Richard C.	St. Joseph
Denman, Dean C.	Monroe
Ersfeld, Murray P.	Detroit
Farney, Jacob P.	Detroit
Finton, Max A.	Jackson
Flora, William R.	Detroit
Goodrich, Benjamin E.	Pleasant Ridge
Graham, Bernard J.	Alma
Hague, Robert F.	Flushing
Harris, Harold H.	Dearborn
Hart, Dean W.	St. Johns
Hasseberger, John B.	Birmingham
Heavner, Lyle E.	Detroit
Hodges, Kenneth P.	Lansing
Hornbogen, Daniel P.	Marquette
Humphrey, Arthur A.	Battle Creek
Johnson, Merlin H.	Gladstone
Kerr, William B.	Saginaw
King, Melbourne J.	Detroit
Kline, John R.	Detroit
Le Gallee, George M.	Detroit
Ludwig, Frederick B.	Port Huron
Maguire, Andrew J.	Utica
McCue, Francis J.	Hudson
McEvoy, Francis J.	Huntington Woods
McGurl, Frank J.	Grosse Point
Miller, Thomas H.	Detroit
Moloney, James C.	Birmingham
Morley, Harold V.	Detroit
Pike, Donald G.	Detroit
Pinkerton, Harold A.	Ironwood
Potter, Earl C.	Lansing
Roth, George E.	Detroit
Rottschafer, John L.	Alma
Ryan, Frederick C.	Kalamazoo
Schmidt, Milton R.	Trenton
Schrier, Paul G.	Kalamazoo
Schwartz, Louis A.	Detroit
Sherrin, Edgar R.	Detroit
Sorum, Eugene B.	Eloise
Spurrier, Ethelbert	Grosse Pointe
Steffe, Ralph S.	Albion
Stolpman, Albert K.	Birmingham
Thirlby, Richard L.	Traverse City
Thompson, Edward C.	Flint
White, Carl H.	Fenton
Wickham, Woodward A.	Jackson

Minnesota

Adair, Albert F. Jr.	St. Paul
Auten, Donald R.	Rochester
Batty, John L.	Hibbing
Bessesen, Alfred N. Jr.	Minneapolis
Brown, Hugh S.	Rochester
Coombs, Carl H.	Cass Lake
Cranston, Robert W.	Minneapolis
Dahle, Manford B.	Glenwood
Doyle, George C.	Duluth
Fait, Roman V.	Little Falls
Feuling, John C.	Bovey
Fritzell, Kenneth E.	Minneapolis
Frost, Russell H.	Owatonna
Haugen, John A.	Minneapolis
Houston, Donald M.	Park Rapids
Hruza, William J.	Minneapolis
Lufkin, Nathaniel H.	Minneapolis
Macklin, William E. Jr.	Litchfield
McDonnell, James L.	St. Paul
Monson, Leonard J.	Canby
Mouritsen, Glenn J.	Fergus Falls
Murphy, Edmund P.	Minneapolis
Nelson, Maynard C.	Minneapolis

Minnesota—Continued

Nelson, Oscar L. N.	Minneapolis
Poore, John C.	Isle
Prins, Leo R. Jr.	Albert Lea
Roberts, Lewis J.	Minneapolis
Roberts, Stanley W.	Minneapolis
Russeth, Arthur N.	Minneapolis
Schroeckenstein, Hugo F.	St. Paul
Skaug, Harold M.	Chaffield
Snell, Albert M.	Rochester
Soucheray, Philip H.	St. Paul
Stemsrud, Harold L.	Alexandria
Thompson, Gershom J.	Rochester

Mississippi

Crawford, Everett H.	Tylertown
Hays, Frank B.	Grenada
Ramsay, Thomas R.	Laurel
Sheely, Efford Eugene	Jackson
Sloan, Joseph M.	Jackson
West, Edwin H.	Lucedale

Missouri

Barger, John A.	St. Louis
Barger, John B.	University City
Erni, Harry E.	College Mound
Fowler, Ivyl C.	Kansas City
Furlow, Leonard T.	St. Louis
Gist, William W.	Kansas City
Greene, Harry L.	Hannibal
Jones, John J.	La Platte
Kloepper, Victor F.	St. Louis
Lauderdale, James A.	Jackson
Lemmon, George B. Jr.	Springfield
MacCamy, Edwin T.	St. Louis
Murphy, Bernard L.	Hannibal
Pedigo, Myron B.	Moberly
Perry, Ralph	Kansas City
Satterfield, Val B.	St. Louis
Scott, Wendell G.	St. Louis
Seabaugh, Dayton R.	Jackson
Senne, Herbert C.	St. Joseph
Taylor, Leo T.	Exeter
Tremain, Irl G.	St. Louis
Vitt, Edwin F.	Clayton
Wilkinson, Everett A.	Kansas City

Montana

Harris, William E.	Livingston

Nebraska

Barr, Joseph H.	Pawnee City
Bitner, Christian U.	Sidney
Calhoun, Orange V.	Lincoln
Fechner, Albert H.	Lincoln
Gridley, Lawrence J.	Omaha
Hubenka, Albin H.	Omaha
Keiser, Alvin F.	Omaha
Koebbe, Ezra E.	Columbus
McDermott, Kenneth F.	Grand Island
Munsell, Donald W.	Lincoln
Neely, John M.	Lincoln
Peck, Willard R.	Omaha
Rasgorshek, Robert H.	Omaha
Rembolt, Raymond R.	Lincoln
Sinclair, Roy D.	Chadron
Wigton, Robert S.	Omaha
Wood, Maynard A.	Lincoln

Nevada

O'Donnell, Robert P.	Elko
Ross, Silas E. Jr.	Reno

New Hampshire

Bryer, Wayne P.	Exeter
Forsberg, Philip M. L.	Concord
Halligan, Thomas J.	Concord
Hayward, Oliver S.	New London
Haubrich, Bernard P.	W. Claremont
Lewowicz, Stanley C.	Nashua
Moran, Edward P.	Nashua
Moriarty, John D.	Concord
Shields, Joseph D. Jr.	Concord
Sinclair, William Jr.	Hanover

MEDICAL OFFICERS RELEASED BY THE NAVY

New York

Amoury, Emanuel J..........New York
Anna, Wilfrid M................Lockport
Argue, Thomas H...............Corning
Arida, Hickmet K..............Brooklyn
Bancks, Howard R............Brooklyn
Billo, Otto E..................Bronxville
Bloch, Charles L...............Rochester
Bloemers, Harms W..........New York
Bly, Loren P.......................Cuba
Briggs, Edward W., Jr........Wingdale
Carpenter, Eugene W............Oneida
Carrougher, Clinton F..........Brooklyn
Chandler, Charles F..........New York
Delmonico, Edward J............Auburn
De Mello, Lopo..............E. Aurora
Devitt, Frederick B............Oneonta
Dick Arthur J.................Flushing
Dowling, Alexander S..........Corning
Doyle, William J....................Utica
Duley, William W............New York
Dunlap, Robert M............New York
Elwood, Michael J..............Syracuse
Emerson. Kendall Jr..........New York
Enselberg, Charles D.........New York
Goepfert, Valentine F......Astoria, L. I.
Goodman, Carlon H. M.....Binghamton
Gorbea, Ricardo L............New York
Gosis, Michael..............Ozone Park
Greenberg, Aaron E...........Brooklyn
Howeth, John L...............New York
Hubner, Edmund H.............Yonkers
Hughes, Delmar V........New Rochelle
Ingraham, Hollis S..........Ulster Park
Jaques, Alan A.........Rockville Center
Lovett, Raymond J................Solvay
Mackenzie, Locke L..........New York
Macnamara, W. P...Jackson Hghts., L. I.
Marrone, Joseph........Manhasset, L. I.
Matusak, George J................Buffalo
Pope, Charles L............Binghamton
Preston, Alexander P........Middletown
Randell, Ralph L..............Jamestown
Razzano, C. L......Williston Park, L. I.
Rearden, John B.................Bayside
Reilly, John J............Staten Island
Retan, Henry W...................Syracuse
Robins, Arthur B...............Brooklyn
Sestero, Enzo F....................Bronx
Severud, Olaf J....................Bogota
Shoemaker, Edwin A...........Lockport
Sidnam, David I....................Solvay
Silbermann, Eugene J.........New York
Simmons, Bradford.............Rochester
Smith, Frank Raymond......New York
Snyder, Perrin B..............New York
Steege, Theodore W.........New York
Steele, James M...............Jamestown
Steen, Reginald R.............Hempstead
Stone, Charles M..........Jamaica, L. I.
Straatsma, Clarence R.....New, Rochelle
Stuard, Henry D....................Genoa
Stump, John P.................New York
Sulzberger, Marion B.........New York
Tartaglione, Edward F..Long Island City
Thompson, Parker C...........Brooklyn
Torrance, Calvin C...........Jamestown
Town, Arno E..................New York
Tyler, William A...................Canton
Ullman, Sanford....................Buffalo
Unger, Louis......................Brooklyn
Walker, Duane B...............Rochester
Walker, Harold L....................Elmira
Wallace, Charles S.................Ithaca
Walsh, Carle D..............Great Hills
Walsh, Thomas S. Jr..........Watervliet
Wander, Maurice C....Kings, Park, L. I.
Weeks, Dana A.........................Peru
Weisl, Bernard A. G.........New York
Welch, Lauren G..........Niagara Falls
White, Albert I......Hopewell Junction
Whitehead, Hugh G. Jr..Cedarhurst, L. I.
Williams, Frank D.................Cicero
Wolf, John S. Jr..............Rochester
Wright, Lewis H............Great Neck

North Carolina

Armentrout, Charles H........Lexington
Bowman, Charles R.........Kannapolis
Bradford, George E......Winston-Salem
Crump, Cecil L..................Asheville
Deaton, Paul Mc...............Statesville
Griffin, Harold W................Hickory
Hamrick, John C....................Shelby
Makepeace, Alexander W....Chapel Hill
Mattison, William L..............Raleigh
Osborne, Joseph E..............Rosman
Rogers, George C...............Graham
Russell, William M............Asheville
Stutz, Malcolm G.......Southern Pines
Welfare, Charles R.......Winston-Salem
Westmoreland, Joseph R........Canton

North Dakota

Burt, Arthur C.................N. Fargo
Haugrud, Earl M...................Fargo
Hoffman, Sidney J............Dickinson

Ohio

Baumes, Ogden H. Jr.........Cincinnati
Baurichter, Frederick P.......Cincinnati
Bayha, Carl H.......................Toledo
Bone, Ralph M..................Cleveland
Bryant, Richard D............Cincinnati
Cauffield, Edwin W..............Everett
Coulson, Austin A..................Malta
Davis, Mel A.................Painesville
Davison, Leo E..............Portsmouth
Diamond, Adrian.............Cincinnati
Eichner, Eduard...............Cleveland
Faircloth, William B..........Zanesville
Fitzgerald, Edmond W...........Toledo
Garvin, Edward R.................Toledo
Geoghegan, Thomas W.........Fostoria
Harris, Lloyd E.............Springfield
Huesman, Aloysius J.........Cincinnati
Jackson, Elmer L...................Shelby
Johanson, Hilding R..............Kenton
Jones, Daniel V...............Cincinnati
Joseph, James W..............Cincinnati
Kellogg, Paul E..................Ashland
Knierim, Harlin G..............Mansfield
Koehler, Joseph S.................Dayton
Kuhn, Howard N.................Bellevue
Mannhardt, Herman W...Bowling Green
McMath, Joseph St............Wyoming
Nenninger, John R,...........Cincinnati
Nosik, William A.....Cleveland Heights
Nusbaum, Wilford D..........Lancaster
Parker, Watson D..............Sandusky
Peters, Eugene W..............Cleveland
Pfanner, Eugene F.................Dayton
Pritz, Walter L..................Cincinnati
Ralston, John F................Cleveland
Rector, Lewis E.....................Akron
Sheldon, Dean E..................Sandusky
Sovik, William E...........Youngstown
Speicher, Clyde M....Cleveland Heights
Weems, Philip D...........Portsmouth
William, Guy H. Jr...........Macedonia
Wolpaw, Benjamin J..........Cleveland
Yates, Ralph D.......................Piqua

Oklahoma

Devanney, Louis R..................Sayre
Duer, Joe L........................Woodward
Fulton, Clifford C.......Oklahoma City
Gallaher, Paul C...............Shawnee
Harrison, Lynn H........Oklahoma City
Hartford, Walter K......Oklahoma City
Hawley, Hugh H.............Stillwater
Hoover, Wilkie D......................Tulsa
Moxley, Joseph N...............Ardmore
Rinker, William S......................Tulsa
Sterzbach, Charles W................Tulsa
Ward, Benjamin W.....................Tulsa
Winkelman, George W....Oklahoma City

Oregon

Brown, Hugh J...............Tillamook
Cheetham, John G.........Garden Home
Davis, Joe B........................Salem
Enos, Russell W...............Portland
Grant, Charles A....................Baker
Herren, Robert Y..............Portland
Johnson, James H.............Portland
Kennedy, Marshall R............Eugene
Norton, Henry H................Eugene
Payne, DeWalt..............The Dalles
Reichman, Carl V.........Klamath Falls
Taylor, David K................Portland
Wells, Stanley E............Hood River
Wilcox, Richard H............Pendleton
Zeller, Werner E...............Portland

Pennsylvania

Bradford, Paul L..................Oxford
Barckley, Rhomas W........Riegelsville
Bream, Charles A.................Midland
Dowd, Thomas F...........Philadelphia
Dunn, Cedric E............Beaver Falls
Farrell, James I....................Bradford
Filson, Homer W....................Butler
Finnegan, William F............Lebanon
Hauck, Samuel M............Lancaster
Hayes, Martin F............Philadelphia
Heller, Jacob R..................Allentown
Hines, Joseph F.................Dunmore
McClelland, Herbert C..........Lebanon
McCloy, Mettitt J..........Mt. Pleasant
Miller, Charles K...........Philadelphia
Wagner, Joseph A.........Upper Darby
Wilkins, Byron D..............Allentown
Winchell, Alexander V.........Rosemont

Rhode Island

Clancey, Daniel J................Newport
Dotterer, Charles A. Jr.........Newport
Hoey, Waldo O..................Rumford
La Pierre, Arnaud R...........Westerly
Little, Mervyn H...........Washington
Margold, Allen M..............Newport
Pournaras, Nicholas A........Providence
Vandale, Albert L............Pawtucket
Vaughn, Arthur H............Providence

South Carolina

Cleckley, James J..................Bamberg
Fleming, John M............Spartanburg
Preacher, Abner B.............Allendale
Ross, Robert A................Charleston
Taliaferro, Richard M..........Columbia
Turner, William P............Greenwood

South Dakota

Delaney, Wm. A. Jr............Mitchell

Tennessee

Baird, Hubert M.............La Follette
Braun, William T..............Memphis
Bringle, Carey G...............Memphis
Ching, Richard E...............Memphis
Crawford, Phillip T............Memphis
Griffin, James C.................Memphis
Hastings, Walter D. Jr........Columbia
Killeffer, Louis A..............Harriman
Lotz, John H......................Memphis
Lowry, Telford A..........Chattanooga
Mathis, James R......................Burns
Mitchell, Edward D. Jr.........Memphis
Mobley, Joseph C..............Memphis
Penn, Herschel.................Knoxville
Price, Raymond M...........Sweetwater
Tirrill, Willard O. Jr............Nashville
Thach, Andrew B. Jr...........Nashville
Taylor, Robert C................Memphis
Williams, Orville K...........Knoxville

CHANGES

Tumolo, Mauro A., Lt. Comdr., Green Cove Springs, Fla. Reported on list 12-1-45. Was not relieved from active duty.

ORGANIZATION SECTION

ANNUAL CONFERENCE OF SECRETARIES AND EDITORS OF CONSTITUENT STATE MEDICAL ASSOCIATIONS

DR. CREIGHTON BARKER, New Haven, Conn., Presiding

FRIDAY, FEBRUARY 8—MORNING

DR. R. L. SENSENICH, Chairman of the Board of Trustees: These meetings have been of tremendous interest and of equally great importance in the conduct of the affairs of the Association. Discussions have from time to time varied from subjects of national importance to matters that were more local. At present we are confronted with a national situation which takes precedence over most of the subjects which we might otherwise discuss. The statement has been made that medicine is maladjusted to the social structure. The implication is that medicine has made no changes and has not progressed and society has by reason of its changes gone entirely away from us. To that I take exception. I think medicine has been realistic and has not been maladjusted or backward. On the contrary, it has brought to the whole people a true reflection of the advances in medical science. I would say society was maladjusted to its own advances, at least economically, whereas medicine has continued to function and has served all. The economic side of medicine offers some problems which are not impossible of solution. If there are changes to be made it is our responsibility to assist in bringing about those changes, but it is important that we know in what respect changes shall be made and, if not extensive, the modifications in our economic pattern should be of a kind which will make medicine available to all the people. Our policies are determined by the House of Delegates, but it is up to the Board of Trustees and the representatives of the constituent societies to shape the pattern of medical care within the structure as set up by the policies that the House of Delegates has put down for us. The responsibility lies to a greater extent with you who represent the constituent societies, as editors and secretaries, probably to a greater extent than any other group in the organized profession. You do much to form the pattern of activity in the various states and to assist in the carrying out of that pattern; in addition you are in better position to reflect the attitude of the public in your contacts in the constituent and component societies than is any other group. Some attitudes are local and some plans are local. Some of them are not practicable of national application, no matter how active the local enthusiasm in promoting them. This, then, is a clinic. We have brought to this clinic those men who can report on conditions and provide new thought with reference to meeting various problems on the basis of the established facts, diagnoses, methods and, what is still more important, the results of those treatments. I want to emphasize the importance of knowing the unsuccessful efforts as well as the successful ones. Dr. Leland used to claim that nobody ever told about the failures. That is unfortunate. Perhaps competitive thinking between state societies has reacted in the direction of making us all want to have many successes checked to our credit. We are disinclined to be realistic or quite frank in the admission of our failures, and especially in calling attention to the things that made the failures.

Current Status of Medical Legislation

MR. J. W. HOLLOWAY JR., Director, Bureau of Legal Medicine and Legislation: Just prior to the Christmas recess congressional action was completed on two measures that are of particular interest to the medical profession. Both related to veterans. Completion was half-way had on another bill, the Hill-Burton hospital construction bill. The Servicemen's Readjustment Act, or the so-called G. I. Bill of Rights, was enacted in 1944 and has been in operation for about eighteen months. During that period a number of questions have arisen concerning the applicability of the provisions of title 2 of the law, which relates to educational benefits to the returning medical officer. These questions were given careful consideration by a subcommittee of the Committee on Postwar Medical Service, and many conferences were held in Washington with the officials of the Veterans Administration in an effort to obtain answers to these questions through administrative rulings.

When amendatory legislation was introduced in the late summer last year, this subcommittee filed with the Senate Committee on Finance a statement recommending four or five changes in the G. I. Bill of Rights in the interest of the returning medical officer. All of these changes have become effective. Three or four of them were incorporated into the law itself, and the other suggestions have been adopted through administrative ruling. Here is what the subcommittee recommended to the Senate Committee on Finance, and the action taken by the Congress on those recommendations:

The subcommittee recommended the removal of the requirement in the case of the medical officer over 25 years of age when he entered service that he prove that his education was interfered with in order to qualify for educational benefits beyond the one year period. This imposed quite a hardship on some of the returning medical officers, and while the attitude expressed in Washington indicated a liberal construction of this requirement, the medical officer was required to file his application with the regional officer of the Veterans Administration having jurisdiction, and there was a possibility of different constructions being made in different regional offices. Now the returning medical officer will be entitled to such educational benefits or a period of educational benefits commensurate with the time he served in the Army or Navy without regard to the age of the medical officer at the time he entered the service.

The subcommittee recommended that the government pay (in the case of a short refresher course) the tuition charged by the institution subject to the $500 limitation and not pro rate the fee as has been considered necessary under the original law. If a returned medical officer pursued such a course for eight weeks at a cost of $250, under the original law the government would not pay the $250 but would pay the proportion of $500 that eight weeks bore to an ordinary school year of thirty-two weeks, or would pay $125 and the medical officer would be required to pay the other $125. Public Law 268, which is the law that amended the G. I. Bill of Rights, provides that in the hypothetical case stated the government would pay the entire $250 and there would be charged against the veteran's period of eligibility the proportion of an ordinary school year which the cost of the short course bears to $500. Since the tuition in this case was $250, and since that is one half of $500, the medical officer will have used up one-half year of his period of eligibility and not merely the eight weeks during which he pursued his course. The subcommittee recommended that the educational benefits be made available to the veteran medical officer while on terminal leave. This was not possible under the original law because of the requirement that the veteran must be discharged or otherwise honorably separated from service before the benefits were available. The new law does provide that the benefits of title 2 and title 3, relating to education and to loans, are available to veterans on terminal leave, with the restriction that subsistence benefit allowances are not payable until the veteran has separated from the service. This amendment was made effective as of June 22, 1944, which was the date the original law was enacted. The fact that Congress did make this particular amendment retroactive constitutes, I think, a justification for an application by a medical officer for reimbursement of funds expended prior to the enactment of this law for refresher courses during a terminal leave period.

The subcommittee made two other recommendations which can be treated together. It recommended that accredited hospitals be specifically recognized in the law as being educational institutions and as such entitled to tuition payments, and that former medical officers pursuing residencies or internships be considered as students and as such be entitled to the subsistence allowances. Prior to recent date there had been much uncertainty as to whether a hospital could be considered as an educational institution under the law and as to whether an intern or a resident could be considered as a student. These recommendations were not included in the new law, but, as indicated in a statement that was published in The Journal on January 26, they have been administratively determined in line with the recommendation of the subcommittee of the Committee on Postwar Medical Service. In brief, a hospital is considered as an educational institution; it may receive tuition payments, and a medical officer serving a residency or an internship in the hospital is considered as a student and is entitled to the subsistence allowance of $65 per month without dependents, or $90 per month if the veteran medical officer has dependents.

Another change in this new law not specifically recommended by the subcommittee permits a veteran to foreshorten his period of eligibility by having paid for him the cost of an educational course in excess of $500 for an ordinary school year. If he does so there will be charged against his period of eligibility the proportion of an ordinary school year which such excess bears to $500. Assume that a returned medical officer, for instance, has a two year period of eligibility. He desires a one year refresher course that will cost him $750. Prior to the recent amendatory law only $500 of the $750 could be paid by the government. Under the amendment the veteran may elect to have the government pay the entire $750, and his period of eligibility for benefits will be reduced not by one year but by one and one-half years.

The amendments that were made to title 3 of the G. I. Bill of Rights relating to loans were for the purpose of simplifying the procedures and extending the benefits. They are too detailed to discuss here. Briefly, 50 per cent of any loan made to a veteran for the purpose set forth in the law, within ten years after the termination of the war, may be automatically guaranteed by the Veterans Administration subject to the limitation that the amounts guaranteed may not exceed $2,000 in the case of a non-real estate loan, or $4,000 in the case of a real estate loan. As heretofore, the loans must be negotiated with a lending agency such as a local bank. No loans are made by the Veterans Administration itself; it only guarantees a part of them. Not more than 4 per cent interest may be charged on any guaranteed loan.

VETERANS ADMINISTRATION

On January 3 the President approved Public Law 293, a bill establishing a Department of Medicine and Surgery in the Veterans Administration. Its provisions were analyzed in detail in The Journal, January 5. Its objective is to provide a better quality of medical care for veterans by offering a greater financial inducement to physicians to associate themselves with the Veterans Administration, by providing for the selection and retention of medical officers without regard to Civil Service requirements, by affording opportunities for medical officers to qualify as specialists with additional compensation and by affording opportunities for postgraduate residencies in veterans' hospitals. The general objectives of this law are admittedly meritorious.

The Hill-Burton hospital bill, which passed the Senate on December 11, is in substantially the same form in which it was reported by the Senate Committee on Education and Labor. It is now pending in the House Committee on Interstate and Foreign Commerce. In the report of the Senate Committee on Education and Labor, Senator Murray filed a reservation to the report of the full committee. He expressed the belief that the bill includes a bad and dangerous administrative arrangement in that it assigns certain essential administrative functions to the Federal Hospital Council; that it devolves too much authority on the states with respect to the use of federal funds. He urged that the federal regulatory power should be extended over the operation and maintenance of hospitals to be constructed under this program.

In reporting this bill to the Senate, the Senate committee suggested certain important changes in the original bill which were thereafter adopted by the Senate. Briefly, these changes were as follows:

The reported bill provides for a five year program and authorizes annual appropriations of 75 million dollars for each of the five years plus unappropriated and unexpended balances. The original bill suggested an appropriation of 100 million dollars for the first year and unlimited appropriation for an unlimited number of years thereafter.

Second, an authorization in the original bill of 5 million dollars for state administrative expenses was eliminated on the theory that the states should be able to handle this aspect of the program without federal aid.

Third, a formula was included for the allotment of federal funds which will tend to eliminate any administrative discretion in making allotments.

Fourth, the term "Public Health Service" was redefined to exclude any reference to medical care.

Fifth, in the original bill it was required that a state plan embody a construction program which would be in accordance with standards to be prescribed by the Surgeon General with the approval of the Federal Council. In the reported bill general requirements are specifically set out, and the federal government's regulatory control is limited to such general requirements. These requirements are laid, in the main, to the number and general manner of distribution of hospitals to be constructed under the program.

Sixth, a designation of the council on the federal level was changed from the Federal Advisory Council to the Federal Hospital Council, because in the opinion of the committee the functions of the council were not solely advisory.

Seventh, there was included in the bill, as recommended by representatives of the Association who participated in the Senate hearings, a provision denying to any federal officer or employee the right to exercise any supervision or control over the administration, personnel, maintenance or operation of any hospital with respect to which any federal funds are made available under this program.

When the bill was on the floor of the Senate, Senator Wagner and Senator Murray offered some six or seven amendments to cure what they thought were the bad features of the bill. One of these amendments would have denied to the Federal Hospital Council any functions whatever other than purely advisory. Another would have conferred on the Surgeon General jurisdiction over the maintenance and operation of the hospitals to be constructed. Still another would have assured that such hospitals could be utilized by all practitioners in the community in which they were located who were licensed to practice, and so on.

The principal support of these amendments came from Senator Murray and Senator Wagner, and all the amendments offered were rejected with the exception of one, and this amendment relates solely to the distribution of public health centers. In the bill as reported to the Senate, the provision was contained in it that the distribution of such centers shall not exceed one per 30,000 of population. Senator Murray suggested an amendment to this provision, as follows: ". . . except that in states having less than twelve persons per square mile, the distribution shall not exceed one per 20,000 population."

The lack of support that Senator Wagner and Senator Murray were able to get in this instance may possibly reflect the idea that the Senate as a whole does not find itself in agreement with the philosophies of these two senators. The bill now is before the House Committee on Interstate and Foreign Commerce, and hearings on it were scheduled for February 25.

DISCUSSION

Dr. Joseph S. Lawrence, Director, Washington Office, Council on Medical Service and Public Relations: A Senate joint resolution has been introduced by Senator Wayne Morse of Oregon. It provides that the Children's Bureau shall be given authority and money to do three things: First, make studies of the health and physical status of children of school ages; second, make studies of the facilities and services offered by schools for the correction of physical defects of school children of school ages; third, recommend the use of and demonstrate in representative urban and rural areas methods of conducting school health examinations and provide school health services. I spoke with Senator Morris about the origin of the bill, and he said that the Children's Bureau of course knew about it, but he was particularly interested because a woman's league had given it to him. Women's organizations are the lively organizations at the present time in studying and advocating changes in our health program. I was invited to be present yesterday afternoon at a discussion before the League of Women Voters of Washington, D. C. They invited a doctor from the Department of Agriculture to represent one side of the question and me the other side. It was a round table discussion. I don't believe any convictions were made at the time, but I do think many of the women got a different idea of the health program generally, at least from their questions as the afternoon progressed, and when the meeting was over some of them came to me and indicated that they had obtained a different idea of the whole situation. However, I believe that many of them were wives of government employees, and after all they would vote today for a government system of medicine. Senator Pepper, on his return from a tour around the world, or rather a tour to the Far East and the war areas, stopped for quite a while in England and talked with Beveridge. He is persuaded, I am told, that we should have some kind of system that follows the lines set out by Beveridge; that is, we ought not any longer have our welfare and social security and various items scattered, but they should be united in one system, one government administrative group. He believes that the Beveridge scope is not too large. I am told, however, that he does not endorse the Beveridge plan 100 per cent; he feels that we can work out something different for ourselves.

DR. HENRY A. DAVIDSON, Trenton, N. J.: Mr. Holloway, with reference to the acceptability of osteopaths in the medical department of the Veterans Administration, do you know whether General Bradley in fact intends not to appoint osteopaths or whether indeed he has any choice in the matter? Is he going to let the clause remain in the bill and not appoint osteopaths?

MR. HOLLOWAY: It is my understanding that it is permissive and not mandatory.

DR. DAVIDSON: There is no provision, as it is now set up, for the osteopathic organizations to insist that they have an absolute right in such appointments?

MR. HOLLOWAY: Not under this law.

DR. CARL B. DRAKE, St. Paul: I should like to ask for a little information with regard to the public health centers. I am from a city and do not know what the views of country practitioners are, particularly, but I have an idea that many of them need (in the way of hospitals in sparsely scattered districts) places where they can take emergency operations, for instance, and fractures and obstetric cases. I understand this bill is going to be limited to public health centers. Can any one tell me just what a public health center will include in its activities?

MR. HOLLOWAY: They exclude medical care.

DR. SENSENICH: There was much discussion of the bill in the Senate, and there was much objection to giving blanket authority for all kinds of treatment centers, the idea being that a treatment center, with an x-ray and small laboratory equipment, would tend in many instances to stimulate or rather encourage doctors to do things for which they probably were not competent. In connection with the Hospital Association, no objection was made to those centers provided they were extension departments or an extended outpatient department, rather, of some existing medical center, where obviously there would be a trained roentgenologist and trained laboratory worker. Finally the discussion swung about to where it was thought better to exclude it entirely with the idea that, if the program went through with sufficient money to create facilities in the way of hospitals, probably it would not be too difficult to arrange so that those services were possible in the hospitals, and they would not be too far away to deal with and to provide facilities for the proper care of patients who needed special service; it would be better to confine those units to educational and public health work.

MR. HOLLOWAY: Dr. Sensenich, wasn't it also suggested by the Senate Committee on Education and Labor, in its report, that the functions of these health centers would be determined on a state level by the state law?

DR. SENSENICH: That is right.

MR. HOLLOWAY: And would not be provided in the federal law. So, what the activity can be, carried on in a public health center, would be determined by the law in the state in which it operates.

Plans for Medical Care in Rural Areas

DR. F. S. CROCKETT, Chairman of the Committee on Rural Medical Service of the American Medical Association: The Committee on Rural Medical Service is one of the more recent efforts of the Board of Trustees to do something of a constructive nature, if possible, for the help of people in rural areas. The one million members of the American Farm Bureau through its auxiliary, the Associated Women of the American Farm Bureau Federation, has been interested in rural medical service for a number of years. Several years ago they appointed a Committee on Rural Health to study the problem of medical care created by the reluctance of young physicians to locate in smaller towns and villages. This, together with the advancing age of the doctors remaining, has created deep concern among the farmers. The American Medical Association was invited by them to assist in the study and solution of the problem. The Board of Trustees appointed a Committee on Rural Medical Service. We had our first meeting last July. We learned that the bureau was opposed to compulsory legislation such as the Wagner-Murray-Dingell bill; however, they recognized that a need existed in many rural areas and feared that there would be federal legislation if something could not be done by themselves as consumers, with the help of the medical profession. Since this is really a community problem multiplied several hundred times, it was apparent that it could not be solved on a national level by either the Farm Bureau or the American Medical Association. We found that the Farm Bureau was organized very much as we in the American Medical Association are organized: If anything was to be done it must be done by the state and county bureaus, as we must act through our state and county societies. It was decided to ask the state societies of medicine to form rural health committees to meet with like committees of the state Farm Bureaus, these committees to confer and organize the counties as and when needed. On our part, a letter was sent to the secretary of each state reporting the conference and the plan. To date some nineteen states have appointed committees or designated some existing committee, and seven states have announced their intention to comply. This project is a full time job for any committee alive to the possibilities inherent in this plan.

Much of the agitation in Congress about the paucity of medical attention arises from the absence of doctors in rural areas. This is not a local condition, in that it exists in practically all the states of the Union. Hence the broad appeal to nearly all legislators who have a rural constituency. If we can show to these congressmen and these senators that an earnest effort is being made to help these communities, much of the immediate heat will be cooled. We all know that doctors cannot be assigned to these places. We also recognize that an opportunity to earn a reasonable living amid satisfactory social surroundings are two of the important factors. Granting that these conditions are met, what can be done to attract well qualified physicians, especially recent graduates, to practice in these communities, often at some distance from a well equipped hospital?

The Hill-Burton bill is generally expected to pass. This bill is expected to provide certain kinds of facilities, especially helpful in rural areas, and it is with that idea in mind that the Farm Bureau has been supporting it. It is at this point that state and county committees, together with their Farm Bureau counterparts, can be of great value in making the Hill-Burton bill solve a really local need rather than a political objective. The unit of population to be served, the unit of mileage to be covered and the type of facility best suited to each community when viewed individually in relation to its professional personnel and when seen as a part of a larger group about a well equipped hospital—all these must be determined and tailored to meet the needs of each locality and larger area, and who can better do that than the local medical profession and the state medical profession together with the farm bureaus of comparable areas?

The term "diagnostic or health center" has not been defined. It is an elastic term. It may mean housing for doctors and dentists, public health officers, laboratory and x-ray equipment. Down in Georgia they assume in their survey that this is to be the definition of a health center. They also suggested that in certain instances adding emergency beds for accident and obstetric cases might be desirable, on the basis of 1 or 1½ beds per thousand of population. All of these might be very helpful to the well trained physician, and its presence in the community would promise much needed diagnostic aid to those adequately trained. If facilities are to be placed here and there through the operation of the Hill-Burton bill, some provision must be devised to maintain a high standard of usage, and I think that is another point in which we must all be very much concerned.

Our recognized hospitals submit to inspection and regulation by the American Medical Association through its Council on Medical Education and Hospitals, resulting in a higher standard of medical care. The benefits of this practice might be extended to the diagnostic centers at a distance if they could be made an outpatient responsibility of the hospital center of the area.

The chairman of this committee made two trips to Washington, one last September, to confer with representatives of the Dairy Cooperatives, representing some 350,000 milk producers in some forty-two states. Following this conference their board of directors adopted a policy opposed to compulsory types of legislation.

If we are to secure for our rural areas the fullest benefit from the Hill-Burton bill, we must have active committees in every state having rural areas with health problems. Now, before the bill becomes law, liaison must be established with interested farm groups, probably from the Farm Bureau. Agreement should be sought covering procedure, contact with the government or the responsible state agency in support of sound administration, preliminary surveys, and the whole thing blueprinted to your satisfaction. In March 1944, just a year ago, the Farm Foundation sponsored a meeting of the Farm Bureau, the Grange and the Farmers Union, assisted by many representatives of the United States Public Health Service, the Department of Agriculture, several colleges of agriculture and other interested individuals. A comprehensive survey of health needs all over the rural part of America was made. Last September this committee met at the Farm Foundation again with representatives of the Farm Bureau, the Grange and the Farmers Union. It seems that they have a national committee composed of representatives of these farm groups, who consider rural health problems, and it was with that group that your committee met to discuss the fourteen point program as it affected farmers. All this is related to you to show you the interest that the farmers themselves have in their own farm health programs.

In July 1945 was held the first conference for county leaders on medical care, health service and facilities in Ohio. This was an interesting conference. It was held at the Ohio State University, but the value of conferences of this kind results from the fact that there has been a good deal of preliminary groundwork done through the extension department, and in this case the Farm Foundation had helped to finance some one to make a special survey of the farm situation in the three general sections of Ohio.

The value of conferences such as this lies in the meeting of farmers with leading public health workers, dentists and leaders of the extension services of the agricultural colleges, resulting in a better understanding of the many economic, housing and social conditions that must be solved in attracting the right kind of doctors to where they are most needed and under conditions where they can do the most good. State committees within your state medical societies on rural medical service could initiate like conferences in other land grant colleges, and I am anxious that that be studied as to one of the things which could be done this year on a wide basis. Some states have already done much in surveying their health needs.

Last summer the state of Georgia published a most interesting survey of rural and urban health needs and facilities. The public health program was prepared by the Health Panel of the Agricultural Industrial Development Board of Georgia. It covered the period 1940 to 1944. The economic condition, the social factors involved and existing facilities were surveyed both in rural and in urban communities. The entire state was covered, and based on that most comprehensive study they made some definite recommendations.

I have just received this copy from Virginia. They have just published a report of their Advisory Legislative Council on medical facilities available in rural areas of the state. They have followed through with the same general idea which I hope all our states are doing and which the rural medical service committees of our states could be helpful in initiating, if they will. Shortage of professional personnel was found greatest in rural areas. Six counties had no active physicians at all in Virginia, and fourteen counties had only one physician to 6,000 or more of population. The remedy suggested including placing facilities for diagnostic and health purposes at strategic points for the use of physicians and public health services; also a large loan fund for rural youth in obtaining a medical education granted on a pledge to practice for a time in rural communities was made. The latter point has been tried a number of times with more or less success, many times without accomplishing much good, but it still has its possibilities, and in Virginia they are going to give it another try.

We should like to have a round table conference some time, probably the first week in April, at which chairmen or members of these rural committees from the states would come in and we could get members of the Farm Bureau committees to attend and see what can be done in such a conference to make effective this sort of effort. It is easy for committees on national levels to meet, to draw resolutions, to affirm general principles, to go home and meet in another year. If this committee is to be of any service to you, to the profession and to rural America, we must have active committees in the states; we must give them jobs and work to do, which we are planning to get busy on now; and from that we must get down to the county level where the actual information many times must be obtained to complete the job.

DISCUSSION

Dr. Victor Johnson, Secretary, Council on Medical Education and Hospitals: These farm groups are vitally interested in collaborating with the medical profession, in meeting the problems of rural medical care. This job cannot be done on a national level. This educational process has to be carried to the grass roots, to the farmer himself, and that must be done through local organizations, through your own committees collaborating with the local committees in the states. The necessity for this can be exemplified by an experience in Virginia, where the Hospital Service Plan conducted a number of surveys, one of them in Craig County, which was selected as an ideal county to enroll farmers and other rural inhabitants into the Hospital Insurance Plan. It was found that 95 per cent of the families did their banking in two banks in one of the cities of the county. It was decided to conduct this campaign through the banks. The banks were to deduct the premiums from the bank accounts of the farmers. They expected that of the 950 families in this ideal county perhaps 500 would enroll. There was a rather high pressure campaign, using that term in the better sense of the word, a well organized campaign to enroll these families. They got not 500 families but 75 families. They set about analyzing why this failure occurred. They decided there were three major factors in that community: In the first place the farmers are not used to having things deducted either from their incomes or from their bank accounts, as is true in the case of urban population Second, farmers take a little longer to make up their minds. They want to think things over a little longer than some of the other people with whom we are used to dealing. Third, they are not as used to the employment of hospitals in times of illness as is true of urban populations. All of these points are matters of education of the individual farmer, which must be carried out on the basis of local educational organizations.

Dr. Crockett mentioned that the Farm Bureau has a membership of one million. Actually the individual membership is something like four times that, because the membership of one million represents family memberships, and on the average in these memberships there are about four individuals per family. Therefore we are dealing with a potent and vocal and powerful cross section of the farm population.

CHAIRMAN BARKER: I realize that many of you come from more rural or agricultural states than I do, but I think farmers are the same almost everywhere. I imagine the farmer adjusts himself to his environment and gets along pretty well. I am not a bit surprised about the seventy-five families taking the hospital plan. They are pretty independent fellows.

DR. SENSENICH: Has any thought been given to the idea of central hospitals at selected spots and the giving of some sort of transportation or ambulance service, or otherwise, with the idea of concentrating the ill some place where they can be given good service? I am wondering if it is practical, or whether any thought has been given to utilizing the Hill-Burton bill or some other means of financing locally, if possible, the establishment of facilities at proper points and then providing some kind of transportation for people who are ill

DR. ARTHUR J. OFFERMAN, Omaha: I am a member of the Nebraska Blue Cross and president of the Nebraska Surgical Plan. We think we are getting some of the rural problems in Nebraska. In western Nebraska, in the small town of Morrow, with about 800 population, we estimated that there were about 200 families. We started a campaign to enroll this small country town in our hospital plan. The campaign was carried on through community effort. In about two weeks we were successful in enrolling about 160 of the 200 families. We thought we were quite successful in doing that. Probably in eight or twelve months we will go back and try to enroll them in our prepayment plan for maternity and surgical care. In the fifteen months we have been in operation we have been successful in enrolling twenty truly rural groups. These rural groups consist of school districts and extension clubs and project clubs. We think the average enrolment in these rural groups amounts to about forty people in each group. Our field director has been active in this, and we think it is due to his single efforts that we have been able to get to the rural groups at all. We have a lot of wide open spaces in western Nebraska, and I have talked with many men in the general practice of medicine, men who are practicing medicine and surgery and obstetrics. I have asked them "What is your experience? How are you doing it? What about maternity care?" More and more of those men are working about hospitals. Even though they are situated 20 or 30 miles from a hospital they are doing most of their maternity work in the hospital. I asked them how they do it. They said "Our roads for the most part are pretty good. They are all surfaced, year round highways, and 35 miles means thirty-five or forty minutes at the most." Many of us live in the city and drive for twenty minutes to make a friendly visit, so twenty minutes farther isn't any great extension of effort. There is an increase in the use of hospitals for all types of care. In my own city of Omaha there were about 5,000 babies born last year, and 4,500 of them were born in hospitals. I think in the rural areas, in the smaller cities and smaller towns, there is great utilization of hospitals. The hospital situation is difficult; there are not enough beds; there is the constant difficulty of getting a patient admitted.

DR. D. G. EDMUNDS, Salt Lake City: Speaking for Utah, may I say that the population more or less follows the main lines of either railroad or automobile transportation. Probably the southeastern part of the state would suffer most. It is sparsely settled, and maybe 75 miles at the most would have to be driven over fairly good roads to reach a hospital; otherwise the country hospitals have been sponsored either by the community or by individuals and are fairly well set up. The state medical association has been studying this question, but we have not taken a particularly active part up to this time, although we intend to. In Utah the Mormon Church is predominant, and the presiding bishops have indicated that they are going to set up rural hospitals on the basis that if the community will put up 50 per cent the church will supply the other 50 per cent. That would make hospitals (the sites of all of which have been selected) available to practically all the rural places in Utah. In any state of that type there are farmers, ranchers and so on who have no telephones or who drive over roads that are pretty bad; but they would be in the minority. On the whole we are pretty well supplied, or will be, with the plans now under way. Regardless of whether the Hill-Burton bill passes or not, we are opposed to federal aid. We feel that it is not necessary and that we can get along very well without much of it.

DR. SENSENICH: Doctor, does it bring the costs down when they do not have great mileage to pay, or is that a factor? The complaint is made that the people who live distances away have to pay so much to have a physician come to see them. I wonder, if they were transported to a hospital, whether it would make very much difference.

DR. EDMUNDS: It would. If a doctor makes a 70 mile trip and charges his mileage plus his fee, naturally it does cost something in an individual case. When it comes to transporting and when the roads are good for driving, there is no reason in the world why almost any one cannot reach a hospital within a comparatively short time. I think it would be from twenty to forty-five minutes at the most, except in the southeastern corner of the state.

DR. SENSENICH: Is there any ambulance service as a community service or organization service?

DR. EDMUNDS: Not unless it is some little local place that has organized an ambulance of its own; but that is not general yet. I do not feel that this rural fear of medical care is going to be great, at least not in our state. We cannot have a medical society in every county; sometimes there will be five counties that will make up one medical unit. Of course there are some sparsely settled areas that may suffer.

DR. SENSENICH: What is the attitude of your local authorities in connection with the indigent under those circumstances? Do they have difficulty being admitted to hospitals for care? Is that an argument to be used against it?

DR. EDMUNDS: If this feeling against federal aid is sponsored as it is going to be, and the hospitals have already planned on it through the Mormon Church in the communities, they are going to have more trouble entering and seeking care, whether they are Mormons or not.

MR. JOHN HUNTON, San Francisco: California is far enough west to qualify under your request, Dr. Sensenich. We have had this problem of trying to cover the rural residents with a prepayment plan. We decided finally that the best method was to work through one or another of the farm organizations. We have three large groups, the Associated Farmers, which is comparable to the Farmers Union in some other cities, we have the Farm Bureau Federation, and we have the State Grange. The State Grange in many places constitutes more or less a social gathering, but it happens to be a rather active organization in California, with about 30,000 farm families as members. Right now we are working with the State Grange to sign a contract with the California Physicians' Service for complete care, under a regular California Physicians' Service contract, for all those 30,000 families, with the State Grange acting as the selling and collecting agency, the California Physicians' Service putting out the promotional material and working with the State Grange and enrolling the groups in their various centers. That thing has not yet been developed fully, and the State Grange has asked for several concessions which are not quite along our line of thinking; but we are working amicably with them and we hope that within another sixty days we shall have a contract signed with that group to take care of 30,000 families. From that beginning we hope to be able to make a break into the Farm Bureau Federation, into the Associated Farmers and into the various cooperatives, which, as you know, not only form a rather tight group in themselves but which also are handling the money of their members and are in an ideal position to make the collections under any prepayment plan.

DR. EDMUNDS: I should have added that the Blue Cross came in there a year ago and already has signed up 27,000 members. It is going well through that locality. The state of Utah will soon have a surgical plan, and it is expected that the Blue Cross will sell it in connection with its hospital service.

Mr. C. S. Nelson, Columbus, Ohio: We find too frequently that some farm people want cheap medical care instead of health, and they have to be told that they cannot have health with cheap medical care. It is a question of improving the economic conditions, the health departments, better facilities, better living conditions and so on; and they also realize that they have the problem on their hands of keeping their own children on the farm. The population figures will show that. It is difficult to get a young physician whose wife and he were born in a city to move into a rural area, largely because of certain social and economic conditions. If we can point out their responsibilities to them and then try to do the things we can do, we shall arrive at a common ground. That is exactly what we have done in Ohio. I think the greatest difference in Ohio at the present time is largely on the question of the cost of the financing. It is a substantial group in Ohio who believe in consumer cooperatives. We do not. If we can work out some plan to finance and distribute medical care, the other problems will be met. They realize that they have a definite responsibility too along with us.

Mr. H. T. Sethman, Denver: In Colorado we have three counties or areas which we refer to as Parks—North, Middle and South. These parks are so located that they have a mountain range, you might say, between them. The population of one of those areas is perhaps 2,000, another around 3,000 and the third about 1,500. At present we have three physicians in the one county. The area extends probably 70 miles in length. The areas are broken up with mountain ranges running between them. The population follows a stream, and the branches are established along that stream. They extend probably for 40 miles up in my direction. The roads in these areas, except for a main highway that extends through the areas, are poor. They are passable in the summer, but most of them are snowed up in the winter. In the past few years we have had some progress made in getting service plows to clear some of the roads so the people could get to the highway or into a nearby city or to their nearby ranches, but that is only on the rare occasion when some one is sick. Then you take a week off to get the county commissioners to decide to plow the fellow out so the doctor can get to him. The question of how adequate the physicians' supply is resolves itself like this: Say a physician has a call to Breckinridge, 70 miles away. He can't make many such calls in twenty-four hours. Many people, of course, get sick at night. When a storm is raging, the physician drives as far as he can in his automobile, then he gets into a feed sled which takes him 6 miles farther, and then another sled takes him the rest of the way. What are you going to do about it? Are you going to have sufficient physicians for every family, or are you going to solve it more by having the economic situation remedied so that these people can get into the towns? It isn't a matter of distance. We have provided hospitalization for these people in good hospitals, not in our own community. The hospital proposition is not so difficult if you can get to the ill in an automobile, provided they are sick enough to go to a hospital; then you can get them there. Many of the obstetric cases are done in the homes in those areas, but the folks have been educated to the fact that it is preferable for them to go to a hospital. Hospital facilities are being taxed in our state generally, and in our hospital centers space is not too available at all times. Of course, the women make arrangements somehow or other either to get to the hospital or to be taken care of at home. As far as rural ambulance service is concerned, that is not such a big problem. Few of the people do not own automobiles, and by making certain arrangements in any auto, other than a coupé, you can easily and comfortably transport a patient to the hospital. The county commissioners like to overlook these facts because it would mean a little more expense to build roads into these areas so that the people could get in and out. I don't know how that problem is going to be solved. If there was a hospital center in an area and you had the personnel to make it a good, serviceable center, how would that hospital operate under the conditions we have to face now? The patients can't get to it. Frequently the passes are closed between the areas because of snow. The pass was closed just before I left, except at the one main pass, and snowslides many times keep one from getting through in a car; however, we do have to tunnel into Denver to get through, sometimes. Even if adequate hospital service was supplied, if the people living in that community were taxed or requested to pay so much to support it, I don't believe they would want it. People from one area cannot get into the other.

As far as getting physicians into those communities is concerned, I think the largest town in any one of these areas has a population of around 400 people. There are just so many physicians who can make a living in that area. It is my opinion that any of the young physicians who would choose a place like that, where they could barely make a living, probably would not represent the quality of men they should be for the kind of care we are talking about.

Dr. A. J. Bowles, Seattle: In the state of Washington in the last legislature a bill was passed to raise money to establish hospitals in communities sparsely settled, which helped to settle the hospital problem to a certain extent. We have a man in Washington by the name of Shadid who, I believe, came from Oklahoma. He is establishing hospitals, selling the farmers at the rate of $100 a share, and sponsoring the hospital he plans to build. He is going to hire a big staff of doctors to staff the hospital. As a state bureau we are attempting and at the present time are taking small groups of a Grange, 1,500 in certain areas, and are giving them full coverage for hospital care, medical care, and so on, not taking the whole state at once, so we can get some idea of what it is going to cost us. I believe that we shall get to help these farmers.

(To be continued)

Medical Legislation

MEDICAL BILLS IN CONGRESS

Disease Prevention

Senator Pepper, Florida, has introduced S. 1875, to authorize the President to mobilize at some convenient place in the United States an adequate number of the world's outstanding experts in an effort to discover means of curing and preventing cancer. An appropriation of $100,000,000 will be authorized to enable the President to carry out the provisions of the bill. A companion bill introduced by Representative Neely, West Virginia, H. R. 4502, is pending in the House.

Senator Langer, North Dakota, has introduced three bills relating to the prevention of disease, S. 1883, S. 1888 and S. 1891. These bills, respectively, propose each an appropriation of $3,750,000,000 (1) for use by the Public Health Service to promote programs for the prevention, diagnosis and treatment of cancer, (2) for disbursement to Sister Elizabeth Kenny for use in establishing and maintaining facilities for the hospitalization and treatment of persons suffering from infantile paralysis, and for investigation and research with respect to the origin, causes and means of control of the disease, and (3) for use by the Surgeon General of the Public Health Service to provide the means for securing a specimen of the urine of each person in the United States and the examination and analysis of such specimen, a report to be made to the health authorities of the municipality or the county wherein the person resides if the examination and analysis disclose the existence of some disease.

Physically Handicapped Persons

Senator Radcliffe, Maryland, has introduced S. 1865, directing the Secretary of Commerce, through the Bureau of the Census, (1) to make a survey of the population of the United States to determine, as far as possible, the number, age and location of physically handicapped persons; (2) to prepare and submit to the President and to Congress a preliminary statement outlining plans for conducting the survey and for classifying citizens found to be physically disabled; and (3) to report to Congress within twelve months the results of the survey. A physically handicapped person is defined as any citizen who, because of (1) congenital deformity, (2) injury or (3) disease, is substantially handicapped in obtaining employment or in self employment

Hospital Construction

Representative Priest, Tennessee, has introduced H R 5628, a bill to amend the Public Health Service Act, to authorize grants to the states for surveying their hospitals and public health centers and for planning construction of additional facilities, and to authorize grants to assist in such construction

Miscellaneous

H R 5645, introduced by Representative Flannagan, Virginia, proposes to enact a Federal Insecticide, Fungicide and Rodenticide Act This bill would regulate the marketing of economic poisons defined to include any substance or mixture of substances intended for preventing, destroying, repelling or mitigating any insects, rodents, fungi, weeds and other forms of plant or animal life or viruses, except viruses on or in living man or other animals

The bill proposing to establish an optometry corps in the medical department of the United States Army, H R 3755, has been reported with amendments, by the Senate Committee on Military Affairs It passed the House Sept 18, 1945

Congressional action has been completed on H R 2348 to bring within the purview of the federal narcotic laws any drug, as defined in the Federal Food, Drug and Cosmetic Act, found by the Secretary of the Treasury to have an addiction forming or addiction sustaining liability similar to morphine or cocaine and proclaimed by the President to have been so found by the Secretary

Hearings on S 1160, a bill to establish a National Neuropsychiatric Institute, have been scheduled for March 6, 7 and 8 before the Subcommittee on Health and Education of the Senate Committee on Education and Labor

STATE LEGISLATION

California

Bill Enacted—S C R 16 X has become resolution chapter No 46 of the Laws of 1945 It is a resolution requesting the state director of finance to appropriate $44 000 for the purpose of carrying out a 1945 law providing for the better protection of the public health by state licensing inspecting, regulating and supervising of public and private hospitals

MASSACHUSETTS

Bills Introduced—H 1209 proposes the establishment of a cash sickness compensation fund to be administered by the Massachusetts division of unemployment security H 1217, to amend the law relating to the taxation of educational institutions, proposes to eliminate the property of such institutions from the exemption provisions if the institution discriminates against applicants for admission thereto because of their race, color, religious creed, national origin or ancestry H 1365 proposes the establishment of a Veterans' Medical Relief Fund to be used for the payment of "all medical bills at any time contracted by any veteran of World War II who shall have been discharged from any of the armed forces of the United States under conditions other than dishonorable, whether such bills are for services rendered to said veteran or to such members of his family as he is under any legal obligation to care for and support" up to a sum not stated in the bill H 1397 proposes to require persons working in restaurants bakeries, stores, bars, etc to submit to and undergo a physical examination as to whether or not said person has tuberculosis or any other communicable disease which might endanger any person he or she may come in contact with the examination to be made at least twice a year H 1398 proposes the establishment of an eye bank in the Massachusetts General Hospital for sight restoration, to collect and preserve healthy corneal tissue from human eyes for transplanting to blind persons who have lost their sight because of corneal defects

Michigan

Bills Enacted—H 13 X was approved February 18 It authorizes the approval of a postwar emergency hospital program for the construction and equipment of a number of hospitals for mentally affected persons S 18 X has become chapter 27 of the Laws of 1946 It provides that persons released from the armed forces who had, prior to their induction, been undergoing training for a trade, occupation or profession shall be entitled to license or qualification under the provisions of the laws covering their qualifications or licensing in force at the time of their entrance into the armed forces Periods of training and practical experience in the armed forces may be accepted by any board of examiners in lieu of the required period

Mississippi

Bills Introduced—H 430 proposes the creation of a Mississippi commission on hospital care to set up and administer a statewide plan for the construction, equipping and maintenance of hospitals, nurses' homes, health centers, clinics and related facilities and in conjunction therewith to prepare a statewide hospital plan and to conduct all necessary studies and surveys incident to developing such a statewide hospital plan S 221 proposes to require all teachers in the elementary and high schools of the state and all other state employees who work directly with children to submit annually to an examination for tuberculosis, including an x ray analysis, by a competent physician or by the state health department

Missouri

Bills Introduced—S 424 proposes to transfer to the State Board of Medical Examiners certain powers and duties heretofore vested in the State Board of Health S 431 proposes to transfer to the State Board of Cosmetology certain powers and duties heretofore vested in the State Board of Health S 432 proposes the creation of a State Board of Chiropody and the assumption by such board of powers and duties heretofore vested in the State Board of Health S 433 proposes to transfer to the State Board of Chiropody certain powers relating to licensing and registration of practitioners heretofore vested in the State Board of Health S 434, relating to the licensing of midwives, proposes to transfer to the division of registration and examination of the state department of education certain powers heretofore vested in the State Department of Health S 435, relating to the licensing of chiropractors, proposes to transfer to the executive secretary of the division of registration and examination of the state department of education certain powers heretofore vested in the State Board of Chiropractic

New Jersey

Bills Introduced—A 133 proposes to prohibit all state boards, commissions and agencies and the board of education from discriminating in any way between ocular practitioners A 147 proposes that the holder of a license to practice a profession, the license or registration certificate of which was forfeited or lapsed because of the passage of time while the holder thereof was in the armed forces, shall be entitled without examination or reexamination, within six months after his discharge, to a renewal or reinstatement of such license on payment of the lawful fee A 164, to amend the medical practice act proposes an addition to the Board of Medical Examiners of a chiropodist to have equal rights and privileges in all matters affecting chiropody A 208 proposes the enactment of a completely new workmen's compensation law and repeal of the existing law A 219, to amend the law relating to the practice of optometry, proposes to make it unlawful for an optometrist licensed under the provisions of this law to engage in the practice of optometry with any corporation organization, group or lay individual A 246, to amend the law relating to the practice of pharmacy, proposes to limit the terms pharmacy' and "drug store' to a business conducted in its entirety as a pharmacy or drug store properly identified as such by signs on the outside of the premises in which the majority of the gross business carried on consists of professional services which may include the sale at retail of drugs, medicines, poisons, chemicals, medicinal vitamins and medicinal vitamin products hormones serums antitoxins, biologicals, pharmaceuticals insecticides disinfectants, sickroom and hospital supplies and surgical appliances A 383, relating to workmen's compensation proposes that whenever a physician surgeon or hospital shall render or furnish medical or hospital service to an employee it shall be the duty of the employer and the insurance carrier if any, to obtain from the physician surgeon or hospital a detailed report in writing of the medical history of the employee and of the examination and treatment of the employee, including the findings, diagnosis, estimates, prognoses and treatments advised and given.

New York

Bills Introduced.—A. 1563 and S. 1469 propose to require the inoculation of all dogs against rabies. A. 1595 and S. 1411 propose the creation of a medical director in the county of Erie who shall be a duly qualified practitioner of medicine and surgery, be a graduate of a medical school and have had at least five years' actual experience in the practice of his profession. He would take over the duties now vested in the medical examiner. A. 1647 and S. 1380, to amend the law relating to divorce, propose to authorize reports of physicians to be received in evidence without the personal appearance of the physicians themselves, where insanity is in issue. A. 1690 and S. 1492, to amend the public health law, propose that no newborn child shall be released from a hospital until a chest x-ray examination particularly of the thymus gland of such child has been taken. The results of such examination must be communicated to the parents of the child. A. 1692 is the same as S. 1354, previously reported. To amend the law relating to nonprofit medical and hospital service corporations, it proposes to authorize the creation of dental expense indemnity service plans. Dental expense indemnity would consist in reimbursement for dental care provided through duly licensed dentists and in furnishing necessary appliances, drugs, medicines and supplies, prosthetic appliances, orthodontic appliances, precious metal and ceramic restorations. A. 1777, to amend the education law, proposes that applicants meeting the preliminary and professional educational requirements of the medical practice act, who present evidence that they have earned a medical student qualifying certificate in accordance with the rules of the department and have served at least one year as a member of a medical corps, detachment or other medical unit of the armed forces of the United States during World War II and were honorably discharged from such service, shall receive and be entitled to receive a license to practice medicine without examination. A. 1811, to amend the hospital lien law, proposes to limit the amount of the lien of a hospital to 15 per cent of the amount recovered by the patient. This limitation, however, would not prohibit the hospital from maintaining legal proceedings to recover the excess. A. 1854, to amend the education law, proposes to prohibit persons licensed to practice optometry from fitting contact lenses into the human eye except under the supervision of a duly licensed physician. A. 2061, to amend the law relating to the labeling of products containing poisonous substances, proposes to prohibit the sale of the following articles unless the container is labeled showing the percentage of the enumerated substances contained therein: aniline antimony, benzene, benzol, cyanogen, ethylene, hydrochloric acid, hallowax, hydrofluoric acid, lead, mercury, nitric acid, phenol, pitch and tar, tetrachlorethane, trichlorethylene, toluol and xyluol. S. 1319 is the same as A. 1167, previously reported. To amend the law relating to hypnotic and somnifacient drugs, it would prohibit prescriptions therefor from being refilled if the prescription bears a direction to that effect. The proposal would further authorize the prescribers to indicate the number of times a prescription may be refilled. If the prescription is silent as to the refilling, then the prescription may be refilled by the pharmacist during a period of not more than six months from the original date of the prescription. A pharmacist would be prohibited from furnishing a copy of the prescription to the patient. S. 1453, to amend the social welfare law, proposes to extend for one year the provisions authorizing emergency service by physicians who are public officers or employees. S. 1520, to amend the workmen's compensation law, proposes to authorize such physician or physicians as an employee or carrier may select and pay for to participate in an examination if the employee or carrier so requests. S. 1563 proposes the creation of a board of examiners in ophthalmic dispensing.

Rhode Island

Bill Introduced.—H. 700, to amend the law relating to the sale of drugs and poisons, proposes that prescriptions for barbital or other hypnotic or somnifacient drugs shall not be refilled or compounded without a written prescription by a duly licensed physician, dentist or veterinarian for each and every refilling.

Bill Enacted.—H. 575 was approved Feb. 20, 1946. It creates a special committee to study the several problems arising out of the administration of the cash sickness compensation act and to make recommendations for amendments thereto.

Virginia

Bills Introduced.—H. 211 proposes the enactment of a hospital licensing and inspecting law. "Hospital" is defined to mean any institution, place, building or agency by or in which facilities for any accommodation are maintained, furnished, conducted, operated or offered for the hospitalization of two or more nonrelated mentally or physically sick or injured persons, or for the care of two or more nonrelated persons requiring or receiving medical or nursing attention or service as chronics, convalescents, aged, disabled or crippled including, but not to exclusion of other particular kinds with varying nomenclature or designation, ordinary hospitals, sanatoriums, rest homes, nursing homes, infirmaries and other related institutions, and undertakings, exclusive of maternity hospitals, to the extent that the same are included within the scope of existing laws. H. 257 proposes that any person who has tuberculosis in a communicable form who, after having been instructed in writing by the local board of health, department of health or health officer or superintendent of any sanatorium of the state to take precautions to protect the members of his household and the public from being infected by tuberculosis communicated by such person, wilfully refuses to follow such instructions shall be guilty of a misdemeanor. H. 289 proposes to require persons dealing in the handling and processing of food for human consumption to submit each six months a certificate from a physician duly licensed for that purpose by the State Board of Health, certifying that such person has been examined and found free from any contagious or infectious disease. H. 303 proposes an appropriation to the department of health for the construction of six health centers in such areas of the state as will most benefit thereby. H. 363 proposes the establishment of a sanatorium for the treatment and rehabilitation of alcoholics. H. 376 proposes the creation of a commission on planning for the state hospital and health center system, the commission to make a hospital and health center survey covering the entire state for the purpose of recommending plans for the establishment and operation of a correlated hospital and health center system. H. 378 proposes regulations for the creation of local hospital or health center commissions. S. J. R. 20 proposes the creation of a commission to make a thorough and complete study of problems related to hospital and medical care, including the need of hospitals and health centers in the state, adequate plans for the prepayment of hospital and medical care for all classes of citizens, with due emphasis on the special needs of rural people, and other items related to the health and medical care of the citizens of the state. S. 164, to amend the law relating to the practice of chiropractic and naturopathy, proposes that any practitioner temporarily licensed, as provided by law, shall be issued a license to practice in his respective branch of the healing arts in Virginia, and such license shall continue in force and effect until suspended or revoked for cause. S. 184 proposes an appropriation to the Virginia Health and Medical Care Council for the purpose of promoting, furthering and fostering better health and medical care throughout the state. S. 226 proposes to authorize the Department of Health to aid in the construction of not more than six health centers in various areas in the state. S. 227 proposes to authorize bodies to be exhumed and autopsies held thereon under certain circumstances. S 237 proposes the creation of an examining board for the certification of clinical psychologists.

Bills Passed.—S. 72 passed the house February 19. It proposes to authorize the state board of public welfare to provide reasonable rules and regulations for the construction, maintenance and operation of boarding homes, homes for the aged and other similar homes, the word "home" meaning "any place, establishment or institution operated or maintained for the maintenance or care of two or more aged, infirm, chronically ill or incapacitated persons." The proposal would exempt from its provisions any hospital, nursing homes, maternity home, children's home or other home or institution which is already or may hereafter be subject to regulation by the board. S. 149 passed the senate February 18. It proposes the creation of hospital authorities to engage in hospital construction, maintenance and operation. S. 166 passed the senate February 16 and the house February 22. To amend the law relating to hypnotic drugs, it proposes that the words "dangerous drugs" shall include, in addition to preparations already so included, "hormones, or hormone drug preparations, whether of natural origin, prepared from the so-called glands of internal secretion or endocrine glands, or whether synthetically produced, by whatsoever trade name or designation, or any compound or mixture thereof; except preparations intended for external use containing hormones in combination with other ingredients unfit for internal administration." No person would be able to sell or give away any such drug except on the prescription of a doctor of medicine, doctor of osteopathy, doctor of dental surgery or doctor of veterinary surgery, lawfully practicing his profession, and prescriptions for hormones could, on written authorizations on the face of the prescription by the prescriber, be refilled a definite number of times as indicated.

RESOLUTIONS AGAINST PEPPER E. M. I. C. PLAN

The Commission on Maternal Welfare of the Medical Society of the State of Pennsylvania, the Philadelphia Obstetrical Society and the Pittsburgh Obstetrical and Gynecological Society have unanimously adopted the following resolution relative to the proposed Pepper plan for maternal and child welfare:

That the Commission on Maternal Welfare of the Pennsylvania State Medical Society is unanimously opposed to any legislation which will perpetuate the present E. M. I. C. plan or any legislation which shall set up any similar plan for maternal and child welfare.

This objection is based on the following facts:

1. There exists no emergency now and there is no public need for any such legislation.
2. Any such program will continue to be solely under the control of the Children's Bureau (or similar bureau) of the Department of Labor and will be centralized in Washington, D. C., and not under the direct control of competently trained physicians.
3. The standards of obstetric care have not improved under the E. M. I. C. plan and cannot be improved by such centralization.
4. The E. M. I. C. plan or any similar plan now under consideration (as in the Pepper bill or the Wagner-Murray-Dingell bill) sets up only a minimum standard of maternal care and at the level of the general practitioner.
5. Adequate maternal care requires a maximum standard of care, and this is not obtained or even approached in the requirements of the present E. M. I. C. plan or the proposed legislation of maternal care as embodied in the Wagner-Murray-Dingell bill.
6. The full and thorough training of future obstetricians has been and will continue to be hampered and interfered with by such legislation. This restriction is felt not only in our medical schools but also in our recognized, accepted or approved hospitals.
7. The medical profession has insisted on adequate maternal care for all expectant mothers. Adequate care denotes maximum care during pregnancy, at delivery and for a definite period after delivery. The present E. M. I. C. plan or the proposed legislation has concentrated on a minimum of care for before delivery only, disregarding entirely the very important phases of the problem, viz., during delivery and through the period directly and for six to eight weeks after delivery (other than a six weeks examination). These are phases in which the accidents and mismanagements make their appearance. No present (E. M. I. C.) or proposed legislation recognizes these two important phases of maternal care; hence the whole plan is full of danger. Maternal and child health depends on all these phases, not on one phase alone with total disregard of one or both of the other two.

All the foregoing factors lead definitely to a lowering of adequate or *maximum maternal care standards, which the medical* profession for the past twenty years has been teaching and practicing in an effort at reducing maternal mortality, which has been accomplished by the profession's efforts. The medical profession through its own organizations has striven to give adequate maternal care to all expectant mothers, and the present E. M. I. C. plan or the proposed legislation sets up only a minimum standard of maternal care. All such legislation, in our professional opinion, eventually will lead to an increase rather than a decrease in maternal mortality, principally because the safeguards are removed and the standards of obstetric care are lowered to a degree below that which we definitely know to be maximum and recognize as adequate.

The Commission on Maternal Welfare is headed by the chairman, Dr. James S. Taylor, Altoona, Pa.

Official Notes

CHANGES IN HEADQUARTERS STAFF

Dr. James R. Wilson, associate professor of pediatrics, Syracuse University School of Medicine, Syracuse, N. Y., has been appointed Secretary of the Council on Foods and Nutrition of the American Medical Association. He succeeds Dr. George Anderson, who resigned to specialize in pediatrics in Rochester, N. Y. Dr. Wilson graduated at Syracuse in 1921.

Mr. Ralph P. Creer, on terminal leave in the Army of the United States, in which he has been director of the medical illustration service, Office of the Surgeon General, has been named assistant in charge of motion pictures of the Bureau of Exhibits, a newly created position. Prior to his entry in service Mr. Creer organized the medical illustration service in the cancer research unit of the Veterans Administration, where he is now a consultant in medical illustration and visual aides. Before his work with the Veterans Administration Mr. Creer was director of the photographic department at the Yale University School of Medicine, New Haven. He organized and was first president of the Biological Photographic Association.

Dr. Frode Jensen, who recently completed three years in the Army of the United States, serving mainly in hospitals on the continent and in Engand, has joined the Council on Medical Education and Hospitals as a hospital inspector. Dr. Jensen, who was released from service with the rank of major, was born in Denmark and graduated at Columbia University College of Physicians and Surgeons in 1933.

Dr. Walton Van Winkle Jr., assistant medical director, U. S. Food and Drug Administration, Washington, in charge of new drugs, has been appointed assistant to Dr. Austin E. Smith to serve as secretary to the new Therapeutic Trials Committee, a standing committee of the Council on Pharmacy and Chemistry, effective April 1. Dr. Van Winkle graduated at Stanford University School of Medicine, San Francisco, in 1938. He concluded three years' service as instructor in the department of pharmacology at Stanford when he first joined the Food and Drug Administration as assistant chief of the division of pharmacology in 1942.

Dr. Harold D. Kautz is returning to the staff of the Council on Pharmacy and Chemistry as assistant to the Secretary. Dr. Kautz was a member of the staff prior to his entry in the Army of the United States some four years ago.

Mr. John A. Kovacs has been made an assistant in the office of the Secretary of the Council. Master Sergt. Kovacs received the Legion of Merit "for exceptionally meritorious conduct in the performance of outstanding services" in an administrative capacity in the North African Theater of Operations (The Journal, Dec. 18, 1943, p. 1054). Mr. Kovacs had been a member of the Council staff before he entered the army.

Dr. Harold R. Hennessy, Los Angeles, recently released from service in the medical corps of the army, has joined the staff of the Council on Industrial Health as Assistant Secretary. While in service Dr. Hennessy received the Bronze Star through the Fifteenth U. S. Army for his work with the military government public health program. Prior to his entry into the army he was medical officer with the California State Department of Public Health. Dr. Hennessy graduated at the University of *Minnesota School of Medicine, Minneapolis, in 1930.*

Washington Letter

(From a Special Correspondent)

March 4, 1946.

Hawley Takes Over as Veterans Medical Chief

Serious hospitalization problems faced Major Gen. Paul R. Hawley, who has been acting as medical chief of the Veterans Administration, as he took over today as permanent chief of the agency's Department of Medicine and Surgery. On loan from the Army up to now, he has retired from the Army to become No. 2 man in the Veterans Administration under Gen. Omar N. Bradley. The Hawley-Bradley hospital program calls for construction of hospitals near medical schools where the best doctors and surgeons will be available. Now it is feared that Congress will insist that the agency take over army and navy surplus hospitals instead of building some eighty new ones. Provision for putting up thirty of this total is now at stake in the 1947 independent office appropriation bill, which is awaiting conference. General Hawley estimates that two thirds of his time has been spent listening to pressure groups on and off Capital Hill.

White House Conference on Saving Food

At the request of President Truman, former President Herbert Hoover and twelve other prominent Americans met in Washington last week for a White House conference on how to save food in this country to ease hunger abroad. The President has asked for an "aggressive voluntary program" to prevent waste of food in the United States so that more can be shipped to war torn sections of Europe and Asia. Mr. Hoover expects the European situation to be alleviated when the first harvest is reaped in June. The Secretary of Agriculture is less optimistic, believing that the chief problem is transportation, not supply. Meanwhile millers have launched the flour conservation program.

Utilization of Military Medical Veterans

Brig. Gen. R. W. Bliss, Deputy Surgeon General of the Army, has written to the National Association of Veterans of the Hospital Corps, with headquarters in Washington at 1705 M Street N.W., urging that hospitals and allied veteran agencies wherever possible use the services of former medical department personnel. The association has appealed for ex-navy and coast guard and army medical veterans to register for cost free service in finding jobs in laboratories, hospitals or institutions as aides, technicians, nurses, doctors, dietitians and orderlies Miss Ruth Kirkland, ex-pharmacist's mate, now chief clerk of the group, says that "utilizing military medical veterans, as suggested by General Bliss, will help in putting the nation on a higher health standard."

Hospital Center Bill Under Consideration

Representative McMillan, chairman of the House District Committee, reports that a new plan is being studied to finance the 1,500 bed modern hospital center proposed for the nation's capital. It would involve deeding Emergency, Garfield and Episcopal hospitals to the government in return for full federal financing. Garfield Hospital would be razed and its 10 acre site used for the new center. The sum of $5,000,000 would be granted for improvements in Providence, Columbia, Children's and Sibley hospitals. The current market value of the land on which the three hospitals to go to the government are located is about $3,000,000, or one fifth of the cost of the proposed $15,000,000 center.

Opposition to Antivivisection Bill

Dr. Alfred Blalock of Johns Hopkins testified against the Lemke antivivisection bill, joining army, navy and private physicians who are fighting the measure, which would prohibit medical experimentation on dogs in Washington Said Dr. Blalock to the House District Judiciary Subcommittee "I defy any surgeon in this country to attempt this operation until he has performed it on one or two animals. I don't think he would have the temerity to try it on any one's child without that" Dr. Blalock said "this work would not have been done" without the dogs, because their blood vessels are large enough to work with and observe. It was pointed out that treatment of water on the brain, lung removal, the use of blood plasma for shock and other life saving operative procedures would never have come about without research on dogs. Brig. Gen. Stanhope Bayne-Jones of the Army, Capt. E. J. Hackenson, director of research at the Bethesda Medical Center, and Dr. Frederick Brady of the U. S. Public Health Service testified how research on dogs had contributed to treatment of such tropical diseases as malaria and filariasis.

Hearings on Mental Health Institute

Public hearings will start March 6 before the Senate subcommittee on health and education on the bill to set up a mental health research institute in the U. S. Public Health Service. The bill would authorize grants for training mental health experts and demonstrations of mental care programs The bill was introduced in the Senate last June by Senator Pepper, Democrat of Florida. Co-sponsors are Senators Thomas, Democrat of Utah, Tunnell, Democrat of Delaware, Hill, Democrat of Alabama, Murray, Democrat of Montana, La Follette, Progressive of Wisconsin, and Aiken, Republican of Vermont.

Explosion in Operating Room

When a tank of nitrous oxide exploded in an operating room at Providence Hospital because of a faulty valve, it shattered the skylight and showered 8 persons, including an anesthetized patient, with heavy plate glass. Dr. Robert Coffey had just completed an appendectomy on the woman patient.

Coming Medical Meetings

Aero Medical Association, Chicago, April 7-9. Dr. David S. Brachman, 1016 Dime Building, Detroit 26, Secretary.

Alabama, Medical Association of the State of, Birmingham, April 16-18. Dr. Douglas L. Cannon, 519 Dexter Ave., Montgomery 4, Secretary.

Alaska Territorial Medical Association, Juneau, March 11-13. Dr. William P. Blanton, Juneau, Secretary.

American Association of Anatomists, Cleveland, April 4-6. Dr. Eliot R. Clark, University of Pennsylvania School of Medicine, Philadelphia 4, Secretary.

American Pediatric Society, Skytop, Pa., May 1-3. Dr. Hugh McCulloch, 325 N Euclid Ave., St. Louis 8, Secretary.

American Physiological Society, Atlantic City, March 11-15. Dr. Wallace O. Fenn, 260 Crittenden Blvd., Rochester 7, New York, Secretary.

American Society for Experimental Pathology, Atlantic City, March 11-15. Dr. Harry P Smith, 630 W. 168th St, New York 32, Secretary.

American Society for Pharmacology and Experimental Therapeutics, Atlantic City, March 11-15. Dr. Raymond N. Bieter, University of Minnesota Medical School, Minneapolis, Secretary.

American Surgical Association, Hot Springs, Va., April 2-4. Dr. Warfield M. Firor, Johns Hopkins Hospital, Baltimore 5, Secretary.

Arizona State Medical Association, Phoenix, May 2-3. Dr. Frank J. Milloy, 112 N. Central Ave., Phoenix, Secretary.

Arkansas Medical Society, Little Rock, April 14-15. Dr. W. R. Brooksher, 602 Garrison Ave, Fort Smith, Secretary.

Central States Dermatological Society, Detroit, April 27. Dr. Clarence E. Reyner, Henry Ford Hospital, Detroit, Secretary.

Connecticut State Medical Society, Hartford, May 1-3. Dr. Creighton Barker, 258 Church St, New Haven 10, Secretary.

Dallas Southern Clinical Society, Dallas, Texas, March 18-21 Dr. John G. Young, 1719 Pacific Avenue, Dallas 1, Director of Clinics

Federation of American Societies for Experimental Biology, Atlantic City, March 11-15. Dr. D. R. Hooker, 19 West Chase Street, Baltimore 1, Secretary.

Florida Medical Association, Jacksonville, April 22-24. Dr. Robert B McIver, P. O. Box 1018, Jacksonville, Secretary.

Iowa State Medical Society, Des Moines, April 17-19. Dr. John C. Parsons, 406 Sixth Ave, Des Moines 9, Secretary

Kansas Medical Society, Wichita, April 22-25 Dr. F. R Croson, 112 W. Sixth St., Topeka, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 23-24 Dr W Houston Toulson, 1211 Cathedral St, Baltimore [illegible], Secretary

Medical Library Association, New Haven, Conn, March 25-27. Miss Frida Pliefke, 2000 Medical Arts Bldg, Minneapolis 2, Secretary.

Missouri State Medical Association, St Louis, March 24-26 Dr. Ralph L Thompson, 634 N. Grand Blvd, St Louis 3, Secretary.

New Orleans Graduate Medical Assembly, New Orleans, April 1-4 Dr Joseph S D'Antoni, 1430 Tulane Ave, New Orleans 13, Secretary

New York, Medical Society of the State of, New York, April 29-May [illegible] Dr Walter P Anderton, 292 Madison Ave, New York 17, Secretary

North Carolina, Medical Society of the State of, Pinehurst, May 1-3 Dr Roscoe D McMillan, P O Box 232, Red Springs, Secretary

Postgraduate Institute of the Philadelphia County Medical Society, Philadelphia, April 9-12. Dr. George P. Muller, [illegible] S 21st St, Philadelphia, Director.

South Carolina Medical Association, Greenville, April [illegible]-May 2 Dr Julian P. Price, 105 W. Cheves St, Florence, Secretary

Southeastern Surgical Congress, Memphis, Tenn, March 11-13. Dr. Benjamin T. Beasley, 45 Edgewood Ave S E, Atlanta 3, Georgia, Secretary

Tennessee State Medical Association, Knoxville, April 9-11. Dr. W. M Hardy, 706 Church Street, Nashville, Secretary.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest such as relate to society activities, new hospitals, education and public health)

DISTRICT OF COLUMBIA

New Director of Venereal Disease.—Lieut Col Samuel R Taggart was recently appointed director of the venereal disease bureau of the District Health Department, filling the vacancy that occurred when Dr Frederick G Gillick resigned last August to accept a position with the U S Public Health Service in Philadelphia (The Journal, Sept 1, 1945, p 81) During the interim Dr Benjamin D Chinn, director of clinical work for the bureau, has been acting chief

FLORIDA

Physician Honored.—Dr. Benjamin H Minchew, Waycross, Ga , past president of the Georgia Medical Association, has been awarded the Baynard Knight cup by the Waycross Kiwanis Club, the award being made annually to the Kiwanian contributing the most distinguished service to the community, it was reported January 6

IDAHO

Licensure Applicants Must be Graduates of Approved Schools—The Idaho State Board of Medical Examiners at a meeting January 15 amended its regulations to provide that after February 15 all applicants must be graduates of an approved medical school of the United States or Canada, as designated in the latest revision by the Council on Medical Education and Hospitals of the American Medical Association A new regulation was adopted stipulating that hereafter no applicant will be allowed to write the examination unless his credentials are in due form to be examined by the board one day before the beginning of the examination and further, that all applicants must be present on the appointed date of the examination of their credentials for a personal interview Applicants appearing late for the interview will not be permitted to write the examination

ILLINOIS

New Executive Director for Handicapped Children—Howard E M Miller, M A , Bloomington has been appointed executive director of the Illinois Commission for Handicapped Children, effective March 1 The commission, with offices at 211 West Wacker Drive, Chicago, is the official state agency responsible for promoting and coordinating both public and private health, welfare, education and vocational services for children who are physically or mentally handicapped

Chicago

The Jaffé Lecture.—The second Richard H Jaffe Lecture will be delivered April 9 at the Palmer House by Dr Wilton M Krogman, associate professor of anatomy and physical anthropology, University of Chicago School of Medicine, on "The Skeleton in Forensic Medicine"

Raymond Allen Goes to Washington.—Dr Raymond B Allen, executive dean of the Chicago colleges of the University of Illinois and dean of the medical school, has resigned to become president of the University of Washington Seattle, effective September 1 Dr Allen graduated at the University of Minnesota Medical School, Minneapolis, in 1928 Before joining Illinois he was dean of the Wayne University College of Medicine Detroit He became executive dean of the Chicago colleges of the university in 1939 and dean of the medical school in 1943

INDIANA

Changes in Health Personnel—Dr Thomas E Conner, Freetown, has been appointed health officer of Jackson county, also jail and county farm physician, succeeding Dr Daniel J Cummings, Brownstown, whose term expired Dr James M Burk Decatur, resigned recently as secretary of the Decatur board of health, in which capacity he had served since 1943

Charles Myers Acting City Health Commissioner—Dr Charles W Myers, superintendent of the Indianapolis City Hospital, has been appointed acting city health commissioner pending the appointment of a permanent successor to the late Dr Herman G Morgan He will continue at the hospital and be assisted in the health administration by Dr Gerald F Kempf director of the bureau of preventive medicine

University News.—Dr John L Arbogast, LaFayette, recently released from service in the army, has been named director of the clinical laboratory of the Indiana University Medical Center to succeed Dr Clyde G Culbertson, Indianapolis who resigned to become a member of the research staff of Eli Lilly and Company Mr Edmund J Shea, recently released from the army, has returned to the center as assistant administrator

Branch Offices Set Up for State Health Department.—Under a decentralization program, five branch offices of the Indiana State Board of Health have been designated under a new zone setup Each branch office will serve approximately eighteen counties, thereby giving coverage to all ninety-two counties of the state Units have been created in Columbus, Valparaiso, Fort Wayne, Washington and Terre Haute The six state board of health district health departments which previously served thirty-three counties in southern Indiana will be discontinued, as these areas will now be served by branch offices

Requirements for Osteopathic Physicians.—The council of the Indiana State Medical Association has requested the state board of medical registration to adopt a resolution concerning the granting of licenses to all osteopathic physicians The legislature in its 1945 session passed a law providing for the practice of medicine by osteopathic physicians under the same terms and conditions as apply to graduates of approved medical colleges In its requests, the council urges

> that each and every applicant for a certificate to practice osteopathy, medicine surgery and obstetrics be required to have successfully passed an examination in materia medica in a medical school approved by the Indiana State Board of Medical Registration and Examination said examination having been successfully passed as a prerequisite to graduation from said approved medical school before the applicant is admitted to examination before the Indiana State Board of Medical Registration and Examination

LOUISIANA

New Professor of Ophthalmology.—Dr George M Haik, New Orleans, has been made professor of ophthalmology at the Louisiana State University Medical School, New Orleans, succeeding the late Dr Theodore J Dimitry

Dr. Kandle Joins Public Health Association—Dr. Roscoe P Kandle, Monroe, has resigned as director of the division of local health services of the Louisiana State Board of Health to become field director of the American Public Health Association, with headquarters in New York

University News—The medical research division of Sharp and Dohme, Inc , Glenolden, Pa , has given $5,000 to the Tulane University of Louisiana School of Medicine, New Orleans, to be used in the continuation of research on sulfathalidine and tyrothricin, under the direction of Dr Chapman G Johnson, assistant professor of gynecology and obstetrics

Graduate Medical Assembly—The ninth annual meeting of the New Orleans Graduate Medical Assembly will be held at the Municipal Auditorium April 1-4 with the following guest speakers among others

Dr William D Stroud, Philadelphia, Cardiology
Dr Frederick D Weidman Philadelphia, Dermatology
Dr Clifford J Barborka Chicago, Gastroenterology
Dr Goodrich C Schauffler, Portland Ore , Gynecology
Dr Russell L Haden Cleveland, Medicine
Dr George T Harrell Jr Winston Salem N C , Medicine
Dr Edgar F Fincher, Atlanta, Ga , Neuropsychiatry
To be announced Obstetrics
Dr James W White, New York, Ophthalmology
Dr Earl D McBride Oklahoma City, Orthopedic Surgery
Dr Oliver L Van Alyea, Chicago Otolaryngology
Dr Robert A Moore, St Louis, Pathology
Dr Arild E Hansen, Galveston Pediatrics
Col James B Brown, Valley Forge General Hospital, Phoenixville, Pa , Surgery
Dr Oscar T Clagett, Rochester Surgery
Dr Elmer Belt, Los Angeles, Urology

Additional information may be obtained from Dr Joseph S D'Antoni, secretary, Room 105, 1430 Tulane Avenue, New Orleans 13

MARYLAND

The Hideyo Noguchi Lectureship—"Charles Edouard Brown-Sequard, a Nineteenth Century Neurologist and Endocrinologist,' was the general subject of the eighth Hideyo Noguchi Lectureship, sponsored by the Johns Hopkins University School of Medicine, Baltimore, and the Institute of the History of Medicine, Baltimore James M D Olmsted Ph D , professor of physiology, University of California Medical School Berkeley, gave the series The first lecture was presented on February 19 on "Mauritian Student and Free Lance Investigator in Paris, the second February 20 on "His Neurological Practice and American Professorships," and the third February 21 on 'In the Chair of Medicine at the College de France' The Noguchi Lectureship was established through a gift of $10,000 given in 1929 by Dr Emanuel Libman, New York

Laboratory for Neuropsychiatric Research.—The Alfred Ullman Laboratory for Neuro-Psychiatric Research is announced for the new name of the laboratory for neuroendocrine research of the surgical division of Sinai Hospital, established in 1935. The new laboratory is the result of the extension and the rebuilding of the old laboratory. The old unit was created through the sponsorship of Dr. Alfred Ullman, Baltimore, and was assigned to Dr. Hyman S. Rubenstein, Baltimore, for research, instruments and supplies being acquired by funds personally supplied by Drs. Ullman and Rubenstein. The newly extended laboratory was made possible through gifts from friends and patients of both physicians and it was decided to name the laboratory in honor of Dr. Ullman, recently retired chief of surgery at the Sinai Hospital, and at the same time to identify it with the principal interest of Dr. Rubenstein, director of neuropsychiatric research. Among other equipment, the laboratory has been furnished with facilities for neuropathologic investigation, a psychogalvanometer, electrical apparatus for peripheral nerve testing and the electroencephalograph. Arrangements have been made to include secretarial and technical assistance. In addition, a research fellowship has also been established.

MICHIGAN

The Beaumont Lecture.—Dr. Robert E. Gross, Boston, will deliver the Beaumont Lecture in the Wayne County Medical Society April 8 on "Surgical Treatment for Abnormalities of the Heart and Great Vessels."

People's Community Hospital Authority Formed.—At a recent meeting of the board of directors of the People's Community Hospital, Inc., it was decided to transfer the assets of the group to the newly created People's Community Hospital Authority, now a municipal corporation. The new group will devote its entire time toward furthering permanent hospital facilities for western Wayne County. The People's Community Hospital in western Wayne County was opened in December 1944, the realization of a plan to make available beds at the Eloise Hospital and Infirmary, Eloise, for patients of private physicians (The Journal, Dec. 30, 1944, p. 1159).

Course in Medical Economics.—The Michigan State Medical Society and the medical schools of the University of Michigan, Ann Arbor, and Wayne University, Detroit, are cooperating in a course on medical economics. The first was opened at Wayne University College of Medicine, March 7, by Dr. Ray S. Morrish, Flint, president of the Michigan State Medical Society. Among his topics were medical societies and what they represent, covering organization, reasons and advantages of joining, how to join, importance of medical meetings and of young men taking part, medical economics and compliance with registration laws. Dr. L. Fernald Foster, Bay City, secretary of the state society, will discuss, March 14, medical public relations, medical legislation and accomplishments. Dr. Wilfrid Haughey, Battle Creek, editor of the *Journal of the Michigan State Medical Society*, will speak, March 21, on Michigan plan for medical service, service to veterans, rural and urban medicine, and voluntary vs. compulsory plans. A similar course will open at the University of Michigan some time in April.

MINNESOTA

Personal.—Dr. Alloys F. Branton, director of the Willmar Clinic, Willmar, and executive secretary of the Minnesota Hospital Association, recently resigned both these positions to become administrator of the Baroness Erlanger Hospital, Chattanooga.

New Industrial Hygiene Head.—George S. Michaelson, chief engineer of the division of industrial health, Minnesota Department of Health, has been named acting director of the division. Dr. Leslie W. Foker, Minneapolis, resigned December 1 as director of the division to enter private practice in the industrial field, according to the *Industrial Hygiene Newsletter*.

Tuberculosis Control Certificate Awarded.—On Dec. 11, 1945 Northfield, the first school system in the United States to qualify, was awarded a tuberculosis control certificate by the American School Health Association. One certificate was given to the Northfield School System, and individual certificates went to Northfield Junior and Senior High School, Longfellow Grade School, Washington Grade School and Rosary Catholic School. Since the first award, announcement has been made of similar awards in other countries.

Special Teaching Assistantships.—Drs. Robert A. Aldrich, Rochester, and Clifford G. Grulee Jr., Evanston, Ill., have been appointed to special teaching assistantships in pediatrics and Dr. Charles U. Culmer, Duluth, to a similar post in surgery, it was announced by Dr. Harold S. Diehl, dean, University of Minnesota Medical School, Minneapolis. Dr. Aldrich graduated at the Northwestern University Medical School, Chicago, in 1944, Dr. Grulee at Northwestern in 1938 and Dr. Culmer at Northwestern in 1940. The funds to support these special assistantships have been provided by the Rockefeller Foundation as part of its program to aid in the development of selected young men whose preparation for teaching and research posts was interrupted by military service. Additional appointments are under consideration in surgery, in neuropsychiatry and in preventive medicine and public health.

NEW HAMPSHIRE

Changes in Health Personnel.—Dr. Mildred I. A. Chamberlin, acting director of the division of maternal and child health and of the division of crippled children's services, state department of health, has resigned to return to private practice in Hillsboro. Capt. Frederick J. Vintinner has returned to his position with the department as director of the division of industrial hygiene. Mr. Vintinner has been serving with the sanitary corps of the Eighth Service Command.

NEW YORK

Director of Mental Hygiene Named.—Dr. Robert P. Kamble, Mount Carmel, Pa., has been appointed director of the division of mental hygiene in the Westchester County Department of Health. He will organize and direct new mental hygiene clinics of the health department.

Emery Dennis Joins Winthrop Company.—Emery W. Dennis, Ph.D., chairman of the departments of bacteriology since 1931 and parasitology since 1935, School of Medicine, American University of Beirut, Lebanon, has been appointed associate director of the biologic division and head of the chemotherapy laboratory of the research laboratories of Winthrop Chemical Company, with offices in Rensselaer. Dr. Dennis received his Ph.D. at the University of California in 1931. From 1935 to 1943 he was associate professor of bacteriology and became professor of bacteriology and parasitology in 1943. During 1934 and 1935 he was in the United States as Rockefeller research fellow in bacteriology at Harvard Medical School.

Compulsory Reporting of Legal Blindness.—All cases of legal blindness in New York must be reported to the commission for the blind of the State Department of Social Welfare in accordance with a recent amendment to the act creating the New York State Commission for the Blind. It is now the duty of every health and social agency, attending or consulting physician or nurse to report to the state commission for the blind, in writing, the name, age and residence of persons who are blind within the definition of blindness and to furnish such additional information as the commission shall request for registration or prevention of blindness. The law supplements the mandated responsibility of the commission for the blind, section 8774, title 24, chapter 3 of the unconsolidated laws to maintain a complete register of the blind in the state of New York which shall describe the condition, cause of blindness, capacity for education and industrial training of each, with such other facts as may seem to the commission to be of value. Data as required by the commission for the blind will further the state's effort to prevent blindness through a comprehensive knowledge of the facts relative to the causes of blindness. This information will also aid in the earlier recognition and detection of cases for which remedial measures for restoration of vision are still possible. Likewise those who may desire the services of the commission for the blind will be benefited through acquaintance with the opportunities available to which they are entitled. Legal blindness is defined as total blindness or impaired vision of not more than 20/200 visual acuity in the better eye and for whom a diagnosis and medical findings show that vision cannot be improved to better than 20/200 or who has loss of vision due wholly or in part to impairment of field vision or to other factors which affect the usefulness of vision to a like degree. Apparent blindness should also be reported even though not based on an eye examination.

New York City

Sam Parker Named Director of Psychiatry.—Dr. Sam Parker, Brooklyn, who has been an alienist in the department of hospitals since 1929, has been appointed director of psychiatry in charge of all psychiatric services in the department. The position has been vacant since the resignation of Dr. Karl N. Bowman (The Journal, Sept. 27, 1941). Dr. Parker graduated at University of California Medical School, Berkeley, in 1913. He will continue as director of the psychiatric service at Kings County Hospital.

Associate Director Named for Speech Hospital.—Dr. Lyman G. Richards, Boston, recently released from service in the navy with the rank of commander, has been appointed associate medical director of the National Hospital for Speech, Disorders, 61 Irving Place. In announcing the appointment, Dr. James S. Greene, medical director of the institution, reported that in 1945, its twenty-ninth year of operation, a total of 3,893 patients registered at the institution, coming from all sections of the United States and Canada and Central and South America.

Committee Named to Choose New Health Commissioner.—A special committee of medical authorities has been formed to recommend a new city health commissioner to succeed Dr. Ernest L. Stebbins, who has resigned to become dean of Johns Hopkins University School of Hygiene and Public Health, Baltimore (THE JOURNAL, Oct. 10, 1945, p. 57). Members of the committee consist of Dr. Thomas Parran, Washington, D. C., surgeon general of the U. S. Public Health Service; Dr. Edward S. Godfrey Jr., Albany, New York State health commissioner; Dr. George Baehr, president of the New York Academy of Medicine; Dr. Wilson G. Smillie, chairman of the public health committee of the New York County Medical Society, and Homer Folks, philanthropist. The committee was formed at the suggestion of Dr. Stebbins, who recently received the thirteenth annual Lincoln Award, presented by the students of the Abraham Lincoln High School for distinguished service to the city. Dr. Stebbins accepted the award in the name of his staff and of every one else affiliated with the department of health. In his speech of acceptance he said that he was happy to see children express their interest in health, as evidenced by the award to him.

Frederick Hoffman Dies.—Frederick Ludwig Hoffman, LL.D., statistician, died in San Diego February 24, aged 80. Dr. Hoffman was born in Germany on May 2, 1865. He came to the United States when he was 19. He subsequently became associated with the Metropolitan Life Insurance Company and the Life Insurance Company of Virginia and served as consulting statistician of the Prudential Insurance Company of America from 1894 until 1935, when he retired at the age of 70. Dr. Hoffman wrote surveys of tuberculosis, cancer, public health, nutrition, malaria, suicide, homicide and various problems of longevity. He held memberships in many medical societies, including the German Cancer Research Society. He was a charter member of the National Tuberculosis Association, director of the American Public Health Association and the American Cancer Society and a member of the National Safety Council. He was a prolific contributor of articles, brochures and books covering a broad range of medical subjects dealing with his various evaluations. In 1911 Tulane University of Louisiana, New Orleans, bestowed on him the honorary degree of doctor of laws. In 1934, with the consent of the Prudential Insurance Company, he presented to the cancer research laboratories of the University of Pennsylvania Graduate School of Medicine, Philadelphia, his library on the subject. In 1943 he was presented in absentia the Clement Cleveland Award. Dr. Howard C. Taylor, in his acceptance address for Dr. Hoffman, credited him with the founding of the American Cancer Society.

NORTH CAROLINA

Changes in Health Personnel.—Dr. Hector H. Henry has been named venereal disease control officer for the city of Charlotte.——Dr. William K. McDowell, Tarboro, has resigned as health officer of Halifax County.

Dr. Morehead to Direct Cancer Program.—Dr. Robert P. Morehead, associate professor of pathology and director of the department, Bowman Gray School of Medicine of Wake Forest College, Winston-Salem, has been appointed educational director of the North Carolina division of the field army of the American Cancer Society.

Dr. Davis Resigns From Industrial Hygiene Division.—Dr. Charles B. Davis Jr., Wilmington, has resigned as director of the division of industrial hygiene of the North Carolina State Board of Health, effective February 1. Newspaper reports indicate that Dr. Davis would return to private practice in Wilmington.

OHIO

Tuberculosis Hospital Association Formed.—The Ohio Tuberculosis Hospital Association was organized Dec. 15, 1945 to set up proposed standards for hospital care. Dr. Oren A. Beatty, Mansfield, superintendent of the Richland County Tuberculosis Sanatorium, is chairman and Dr. William L. Potts, Columbus, of the Franklin County Sanatorium is secretary.

Personal.—Dr. Roy H. Clunk, Massillon, was recently elected president of the Massillon school board.——Dr. Arthur M. Culler, Dayton, has been appointed associate professor of ophthalmology at the Ohio State University College of Medicine, Columbus.——Dr. Donald E. Hale, Butte, Mont., who for the past three years has been in charge of anesthesia at the U. S. Naval Hospital in Philadelphia, has been appointed anesthesiologist at the Cleveland Clinic.

Appointments at Cincinnati.—Dr. Burr N. Carter, recently assistant to the chief surgical consultant in the office of the Surgeon General, Washington, D. C., with the rank of colonel, was named professor of surgery at the University of Cincinnati College of Medicine, succeeding the late Dr. Mont R. Reid. Dr. Albert B. Sabin was promoted from associate professor to full professor of research pediatrics at the school. Joseph L. Schwind, Ph.D., associate professor of anatomy, Albany Medical College, has been named chairman of the department of anatomy, succeeding Dr. Edward F. Malone, resigned.

PENNSYLVANIA

Philadelphia

Personal.—Dr. John W. Crosson, associate medical director of the Medical Research Division of Sharp and Dohme, Inc., has been appointed medical director.

Class of 1911 to Hold Reunion.—The thirty-fifth reunion of the Medical Class of 1911, University of Pennsylvania School of Medicine, will be held May 14 at the Pine Valley Golf Club, Clementon, N. J. Dr. Wilbur H. Haines, 255 South Seventeenth Street, is secretary.

Society News.—Dr. Carlos Santos, Lisbon, Portugal, addressed a special meeting of the Philadelphia Roentgen Ray Society, January 17. *Philadelphia Medicine* reported that Dr. Santos presented a new type of stereoscopic fluoroscopy and a brief analysis of the fundamentals in stereoscopic vision.

Alpha Omega Alpha Lecture.—Dr Eugene M. Landis, George Higginson professor of physiology, Harvard Medical School, Boston, gave the annual Alpha Omega Alpha Lecture at Jefferson Medical College, January 16. His subject was "Venous Pressure and Cardiac Failure in the Laboratory and Clinic."

Postgraduate Institute.—The tenth annual Postgraduate Institute of the Philadelphia County Medical Society will be held at the Bellevue-Stratford Hotel, April 9-12, on the subject of "Progress in Medicine." There will be the usual technical and scientific exhibits. Registration fee for nonmembers of the society is $5. Medical officers are admitted free. The director is Dr. George P. Muller, 301 South 21st Street, Philadelphia 3.

New Professor of Surgery.—Dr. John H. Gibbon Jr., assistant professor of surgery, University of Pennsylvania School of Medicine, has been appointed professor of surgery and director of surgical research at the Jefferson Medical College. He will succeed Dr. George P. Muller, Grace Revere Osler professor of surgery, who will retire at the end of the current school term in March. Dr. Gibbon is the son of Dr. John H. Gibbon, emeritus professor of surgery at Jefferson.

Jefferson Rearranges Obstetric Program.—Dr. Thaddeus L. Montgomery, professor of obstetrics and gynecology and head of the department at Temple University School of Medicine and Hospital, has been appointed to a similar position at Jefferson Medical College. He will succeed Dr. Norris W. Vaux, whose retirement becomes effective at the end of the current school term in March. Dr. Montgomery will devote his major teaching to obstetrics but will continue his practice and participation in gynecology. Coincidental with the announcement of Dr. Montgomery's appointment was one stating that the department of gynecology and the department of obstetrics at the Jefferson Medical College and Hospital will be combined in one department with Dr. Lewis C. Scheffey, professor of gynecology since 1940, as head of the department, professor of obstetrics and gynecology, and director of the division of gynecology. The amalgamation will permit the most effective cooperation in the teaching and practice of obstetrics and gynecology.

SOUTH CAROLINA

Former State Health Officer Honored.—The Columbia Medical Society at its January meeting presented Dr. James A. Hayne, Columbia, former state health officer, with a silver pitcher and tray for his nearly thirty-five years of service in public health work in the state. Dr. Hayne, who became state health officer of South Carolina in 1911, retired in 1944 to become public health education director for the department (THE JOURNAL, May 6, 1944, p. 73). Dr. Hayne is a former president of the Columbia Medical Society and also of the South Carolina Medical Association.

TEXAS

Dr. Cary Honored.—Dr Edward H. Cary, Dallas, on February 21 was presented with the Linz Award, given by Linz Brothers to the "outstanding citizen of Dallas" Dr Cary was cited for his activities as a medical educator and principally for his work as founder and director of the Southwestern Medical Foundation The *Times Herald* is sponsor of the award, which is donated annually by Linz Brothers It is a silver shield on a mahogany base and carries the inscription "for the high ideals and noble aims, from which your splendid work has resulted in greatest benefit to the community of Dallas, this presentation is made by Linz Brothers" Dr Cary, as president of the board of trustees of the Southwestern Medical Foundation, was responsible for the establishment of the Southwestern Medical College He graduated at Bellevue Hospital Medical College, New York, in 1898 From 1902 until 1943, when it moved to Houston, he was professor of ophthalmology and otolaryngology and head of the department at Baylor University College of Medicine, serving as dean from 1903 to 1920 He served as member of the board of trustees of the American Medical Association from 1925 to 1929 and was president of the Association in 1932

Activities at Texas Medical Branch.—Morris Pollard, D V M, formerly of Bellevue, Md, has been appointed assistant professor of preventive medicine and public health to take charge of teaching and research in virus disease at the University of Texas Medical Branch, Galveston Dr Pollard organized and directed the virus laboratory of the Eighth Service Command of the army The National Foundation for Infantile Paralysis, Inc, has granted $3 500 for the support of the work of Ardzroony A Packchanian, Ph D, associate professor of bacteriology and director of the laboratory of microbiology at the university The grant is made to assist in the development of an appropriate small animal host for poliomyelitis virus The John and Mary R Markle Foundation has made a grant of $4 000 to aid the studies on the chemotherapy of malaria under the direction of Dr Wendell D Gingrich of the laboratories of bacteriology and parasitology at the university The John and Mary R Markle Foundation of New York has given a grant of $6,750 to support the studies on rickettsial diseases under the direction of Dr Ludwik Anigstein, associate professor of tropical medicine, and Russell W Strandtmann, Ph D, assistant professor of preventive medicine at the university The Winthrop Chemical Company of New York has made a grant for the study of new anesthesia under the direction of George A Emerson, Ph D, professor of pharmacology at the university. Cancer research at the university under the direction of Wilbur A Selle, Ph D, professor of physiology, has received a grant from the International Cancer Research Foundation, Philadelphia

WEST VIRGINA

Quarantinable Diseases.—Only five communicable diseases are quarantinable in West Virginia under revised regulations adopted by the Public Health Council at a meeting held at Charleston, January 7 Diphtheria, smallpox, epidemic typhus (louse borne), plague and cholera are still classed as quarantinable, but placarding is required only for smallpox, cholera and plague Previously measles, meningococcic meningitis, poliomyelitis, scarlet fever and whooping cough have been quarantinable For other communicable diseases only isolation of the patient is required, and child contacts are to be excluded from school as indicated on the chart of the "Common Communicable Diseases" recently prepared for distribution by the state health department The new regulations were approved by the council of the West Virginia State Medical Association at a meeting held in October 1945, and the Public Health Council has fixed July 1, 1946 as the official effective date The state health department has suggested that all local health departments adopt the new regulations immediately so that ground work may be laid before they actually become law This is necessary because all regulations of the Public Health Council must be advertised locally before they can be officially put into effect A new communicable disease code patterned closely after the American Public Health Association's manual on "The Control of Communicable Diseases" was also adopted by the Public Health Council This action was also recommended by the council of the state medical association While pellagra is no longer reportable, the following have been added to the list of reportable diseases

Epidemic diarrhea of the newborn
Favus
Food infections (salmonellosis)
Food poisoning (staphylococcus and botulinus)
Granuloma inguinale
Infectious keratoconjunctivitis
Lymphogranuloma venereum
Rat bite fever
Relapsing fever
Rheumatic fever
Puerperal infections
Typhus
Weil's disease
Glanders
Acute infectious hepatitis
Pneumonia (all type)

GENERAL

Appointments to Rockefeller Institute.—The board of scientific directors of the Rockefeller Institute for Medical Research announces the appointment of David P C Lloyd Ph D, New Haven, as associate member Dr Reginald M Archibald has been appointed associate and James A Baker, Ph D has been promoted from assistant to associate, Cynthia H Pierce, Ph D, and James R Weisiger, Ph D, have been appointed assistants, all of New York

New Administrative Officer for Hard of Hearing—Mr Harry P Wareham, Rochester, N Y, for many years identified with campaigns for community chests in various cities and formerly executive vice president of the National War Fund, has been named executive vice president of the American Society for the Hard of Hearing, effective March 1 In his new position Mr Wareham will direct the expansion program planned by the society

Publication on Colloid Science.—A new periodical known as the *Journal of Colloid Science* began publication with the January issue Its editors are chosen from British Canadian and American institutions with consulting editors from other countries as well The periodical is published by the Academic Press, Inc, 125 East 23d Street, New York 10 It is published bimonthly at $10 per year The chief editor is Dr Victor K LaMer, Columbia University, New York

Society News—The American Dietetic Association will hold its twenty-eighth annual meeting at the Netherland Plaza Hotel, Cincinnati, October 14-18——The fifty ninth meeting of the American Association of Anatomists will be held in Cleveland April 4-6 Demonstrations will be held at Western Reserve University School of Medicine, Cleveland, and all other sessions at the Hotel Statler——The American Hospital Association will meet in Philadelphia the week beginning September 30

Dr. Collisi Medical Director of Planned Parenthood Group—Dr Harrison S Collisi Grand Rapids Mich, who retired from the Army of the United States with the rank of colonel in December 1945, has been named medical director of the Planned Parenthood Federation of America New York, effective March 4 He succeeds the late Dr Claude C Pierce In his new position, Dr Collisi will cooperate with state public health services to make planned parenthood an integral part of their maternal health services and will work closely with medical schools and colleges providing instruction in the control of human fertility Dr Collisi graduated at the University of Michigan Medical School, Ann Arbor, in 1912 He entered the army in May 1942

Obstetricians Resume Midyear Clinics—The American Association of Obstetricians, Gynecologists and Abdominal Surgeons will resume its midyear clinics when it holds sessions in Chicago April 12-13 On the tentative program are Drs Jacob P Greenhill and associates, Cook County Hospital, Frederick H Falls and associates, Research and Educational Hospitals, Herbert E Schmitz and associates Mercy Hospital-Loyola University Clinics and Edward L Cornell and associates, all of Chicago, Henrotin Hospital The atomic bomb will be discussed at the dinner session The association also announced that its annual prize contest will be conducted again this year For information concerning either activity of the association address Dr James R Bloss, secretary, 418 Eleventh Street, Huntington 1, W Va

Medical Library Meeting—The Medical Library Association will hold its forty-fifth meeting at the Yale Medical Library, New Haven, Conn, March 25 27, headquarters will be at the Hotel Taft Miss Mary L Marshall, New Orleans will deliver the presidential address, on "Training for the Medical Librarianship" One session will be devoted to the History of Medicine in Connecticut, by Dr Herbert Thoms curator of the Yale Medical Memorabilia of the Yale University School of Medicine New Haven Conn, and by Harold S Burr, Ph D, and The Yale Medical Libraries, by Dr John F Fulton, New Haven Another session will be devoted to a report on the Army Medical Library by the staff of the library Other speakers will be

Dr Sanford V Larkey Baltimore Experiences as Medical Historian of the European Theater
Miss Mildred V Nayor The Exchange
Mr Jurgen Raymond, New York Academy of Medicine Interlibrary Lending Policies
Miss Ethel Wigmore National Medical Research Institute London, Medical Libraries in Britain and on the Continent
Dr W W Francis librarian Osler Library McGill University, Advertisements in Early Printed Books

Members of the staff of the Sterling Memorial Library Mr James F Babb, Miss Mary C Withington and Mr Donald G Wing will discuss respectively the university library, the planning and erection of the library building and the short title catalogue of English books 1641-1700

Deaths

Harold Dean Palmer ⊕ Philadelphia; University of Minnesota Medical School, Minneapolis, 1928; born in Fairmont, Minn., in 1901; professor of psychiatry at the Woman's Medical College of Pennsylvania; associate in psychiatry at the University of Pennsylvania School of Medicine, where he was psychiatrist of the student health service; specialist certified by the American Board of Psychiatry and Neurology, Inc.; member of the American Association for the Advancement of Science, Association for Research in Mental and Nervous Diseases, Philadelphia Neurological Society and the American Neurological Society; president of the Philadelphia Psychiatric Society, 1943-1944; fellow of the College of Physicians of Philadelphia, American Psychiatric Association and the American College of Physicians; lieutenant commander, medical corps, U. S. Naval Reserve, retired; attending chief, psychopathic department, Philadelphia General Hospital; senior psychiatrist, Institute of the Pennsylvania Hospital; psychiatrist to the Pennsylvania Hospital; consultant, Department for Mental and Nervous Diseases, Pennsylvania Hospital; died November 20, aged 44, of coronary thrombosis.

Paul Forrey Stookey ⊕ Kansas City, Mo.; Chicago College of Medicine and Surgery, 1913; born in Cedar Rapids, Iowa, in 1888; assistant professor of medicine at the University of Kansas School of Medicine, Kansas City, Kan.; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; in 1933 appointed epidemiologist of the city health department; professor of immunology and head of the department of experimental medicine, Kansas City Western Dental College; formerly associated with the U. S. Public Health Service Reserve; served during World War I; senior consulting physician and director of service, isolation department, Municipal Hospital; attending physician, Research Hospital and St. Joseph Hospital; chief of staff at St. Mary's Hospital, where he died November 25, aged 57, of carcinoma of the left lung.

Herman Grover Morgan, Indianapolis; Indiana University School of Medicine, Indianapolis, 1909; served as president of the Indianapolis Medical Society; secretary of the city board of health for thirty-three years and in 1945 appointed secretary of the newly created Indianapolis Board of Health and Hospitals and director of public health; the new health center of Flanner House, Negro welfare agency, was dedicated as the Herman G. Morgan Health Center in his honor; assisted in the organization of Lilly Base Hospital number 32 and was stationed at Fort Harrison as a member of the United States Public Health Service during World War I; superintendent of the Indianapolis City Hospital in 1918 and 1919; an instructor of public health and sanitation at the City Hospital School of Nursing, a position he filled until a short time before his death on January 8, aged 60, of carcinoma of the stomach.

Darwin Clare Perkins, Jamestown, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1906; born July 28, 1879; member of the American Medical Association; fellow of the American College of Surgeons; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; served as health officer of the town of Busti and the Village of Celeron; health officer of Lakewood, where he had been a member of the board of education since 1933 and president since 1937; recently resigned a position on the faculty of the Jamestown Business Institute; vice president of the board of visitors of the Gowanda State Homeopathic Hospital, Helmuth; on the staff of the Jamestown General Hospital and the Woman's Christian Association Hospital, where he died November 27, aged 66, of arteriosclerosis.

Abraham Trasoff ⊕ Philadelphia; Medico-Chirurgical College of Philadelphia, 1915; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians and the American Academy of Allergy; a captain in the medical corps of the U. S. Army during World War I; a consultant for the U. S. Veterans Bureau from 1919 to 1925; consultant for the Selective Service Board during World War II; adjunct visiting physician and head of the department of allergy at the Mount Sinai Hospital from 1927 to 1933, when he became chief of medicine; on the staffs of St. Luke's and Broad Street hospitals; died November 24, aged 56, of coronary thrombosis.

Robert Claud Farrier ⊕ East St. Louis, Ill.; Memphis (Tenn.) Hospital Medical College, 1908; director of the East Side Health District and the St. Clair County Defense Zone Health Department; served as health officer of Delta County, Mich., with headquarters in Escanaba, and director of the Monongalia County (W. Va.) Health Department; at one time in charge of the health department in Homer, La.; member of the American Public Health Association and the American Society for Tropical Diseases; past president of the West Virginia Public Health Association; died in the Barnes Hospital, St. Louis, November 20, aged 58, of hypertensive cardiovascular disease.

Dexter Hall Hardin ⊕ Dallas, Texas; Baylor University College of Medicine, Dallas, 1920; member of the American Medical Association; since 1943 associate professor of clinical gynecology at the Southwestern Medical Foundation School of Medicine; assistant in clinical gynecology at his alma mater from 1922 to 1926, where he was instructor from 1926 to 1938 and assistant professor from 1938 to 1943; served during World War I; dispensary gynecologist and associate gynecologist at the Parkland Hospital and the Baylor Hospital, where he died November 17, aged 51.

Hamilton Goss Ansley ⊕ Decatur, Ga.; University of Georgia Medical Department, Augusta, 1928; past president of the DeKalb County Medical Society; on the staff of the Emory University (Ga.) Hospital; died December 16, aged 43, of cerebral hemorrhage.

Melvin Leighton Battles, Norwalk, Ohio; Cleveland Homeopathic Medical College, 1904; member of the American Medical Association; served during World War I; in 1938 retired from the National Guard with the rank of major; died November 27, aged 66.

Louis Bernstein ⊕ Pittsburgh; University of Pittsburgh School of Medicine, 1923; formerly on the staff of the Veterans Administration Facility in Aspinwall; died in the Presbyterian Hospital November 24, aged 45, of coronary occlusion.

Leslie Carr Bishop, Wichita, Kan.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1903; member of the American Medical Association; on the staffs of the Wichita and St. Joseph hospitals; consultant at the Veterans Administration Facility; died in Altadena, Calif., January 6, aged 63, of heart disease.

William N. Boerstler, Stow, Ohio; Western Reserve University Medical Department, Cleveland, 1883; died November 30, aged 89, of senility.

Oliver Diehl ⊕ Medical Director, Captain, U. S. Navy, retired, Bethayres, Pa.; Jefferson Medical College of Philadelphia, 1879; entered the U. S. Navy in July 1882; served in the Spanish-American War, Boxer Rebellion and World War I; retired July 7, 1918 for incapacity resulting from an incident of service; died in Wyncote December 16, aged 89, of a fractured hip and uremia.

Thomas Samuel Finney, Wichita, Kan.; Johns Hopkins University School of Medicine, Baltimore, 1919; member of the American Medical Association; on the staffs of St. Joseph and Wichita hospitals; died January 29, aged 52, of cardiac decompensation and cerebral hemorrhage.

James Siebert Gamble, Lincolnton, N. C.; Medical College of Virginia, Richmond, 1943; superintendent of the Reeves Gamble Hospital and local surgeon for the Seaboard and Southern Railways; died near the Charlotte airport November 4, aged 27, when his private plane crashed.

Thomas A. Guillory, Groesbeck, Texas; Kentucky School of Medicine, Louisville, 1908; member of the American Medical Association; died in Oakdale, La., November 7, aged 63.

Pugh Haynes, Woodlawn, Tenn.; University of Louisville (Ky.) Medical Department, 1884; died November 20, aged 85.

Emil Benjamin Isgreen, Salt Lake City; Rush Medical College, Chicago, 1897; member of the American Medical Association; honorary member of the Utah State Medical Association; on the staff of the Dr. W. H. Groves Latter-Day Saints Hospital, where he died November 25, aged 79, of coronary and cerebral arteriosclerosis.

John Dillard Jacobs, Atlanta, Ga.; University of Nashville (Tenn.) Medical Department, 1898; formerly professor of hygiene and physiology at his alma mater, where he served as secretary and treasurer; died in the Halifax District Hospital, Daytona Beach, Fla., October 17, aged 71.

Robert John James, Los Angeles; Minneapolis College of Physicians and Surgeons, medical department of Hamline University, 1899; on the staffs of the Golden State and Methodist hospitals; died November 30, aged 73.

Ray Walter Karras ⊕ Lake City, Fla.; Wisconsin College of Physicians and Surgeons, Milwaukee, 1912; member of the California Medical Association; served on the staffs of various

Veterans Administration facilities; major, medical corps, Army of the United States, not on active duty; died November 9, aged 57.

Maurice I. Klein, East Orange, N. J.; Baltimore University School of Medicine, 1902; formerly affiliated with the Beth Israel Hospital in Newark; died in the Memorial Hospital, New York, November 21, aged 63, of heart disease.

Albert Knooihuizen, Holland, Mich.; Detroit College of Medicine, 1895; died November 17, aged 81.

Alonzo E. Mack ⊕ Glendale, Calif.; John A. Creighton Medical College, Omaha, 1896; formerly professor of obstetrics at his alma mater; died November 20, aged 75.

Edward McCarthy ⊕ Richmond, Va.; Medical College of Virginia, Richmond, 1881; died November 28, aged 86, of a fractured hip and uremia.

James Albert McComb ⊕ Lebanon, Mo.; Beaumont Hospital Medical College, St. Louis, 1887; on the staff of the Wallace Hospital; president of the public library board; for many years president of the State Bank of Lebanon and chairman of the board of directors at the time of his death on November 15, aged 82.

Gilbert Copson McCormick ⊕ Kansas City, Mo.; Illinois Medical College, Chicago, 1909; served during World War I; major, medical reserve corps, U. S. Army, not on active duty; died in the Menorah Hospital November 21, aged 71, of cerebral hemorrhage.

John Francis McDonald, Hillsboro, Texas; University of Texas School of Medicine, Galveston, 1912; member of the American Medical Association; served during World War I; major in the medical corps of the National Guard not on active duty; died November 18, aged 64, of coronary occlusion.

Walter McDowell ⊕ Evansville, Ind.; Indiana University School of Medicine, Indianapolis, 1929; interned at St. Luke's Hospital in Jacksonville, Fla.; on the staffs of the Welborn-Walker and Protestant Deaconess hospitals; began active duty as a first lieutenant in the medical corps, Army of the United States, in July 1942 and relieved from active duty in November 1942; died November 27, aged 40, of coronary thrombosis.

John Joseph McKenna, Philadelphia; Hahnemann Medical College and Hospital of Philadelphia, 1905; associate professor of roentgenology at his alma mater; served overseas as major in the medical corps of the U. S. Army during World War I; on the staff of the Hahnemann Hospital, where he died November 25, aged 72, of aleukemic leukemia.

William E. Messenger, Independence, Mo.; College of Physicians and Surgeons, Keokuk, Iowa, 1887; died November 17, aged 83.

William Henry Morrison, Springfield, Mass.; Baltimore Medical College, 1905; member of the American Medical Association; died November 22, aged 65, of coronary thrombosis and hypertensive heart disease.

William Ralph Needelman ⊕ Portland, Maine; Yale University School of Medicine, New Haven, 1923; served during World War I; commissioned a first lieutenant in the 240th Coast Artillery, Maine National Guard, in 1937, being called to active duty in September 1940 with the rank of captain; discharged a year later because of ill health; member of the staff at the local induction station since its inception; formerly county medical examiner; on the staff of the Mercy Hospital, where he died November 22, aged 51, of heart disease.

Samuel Arthur Nichols ⊕ Clarksville, Md.; Baltimore Medical College, 1897; past president of the Medical and Chirurgical Faculty of Maryland, Howard County Medical Society and the Maryland, Virginia and District of Columbia Medical Society; affiliated with the Montgomery County General Hospital, Olney, and the Maryland General Hospital in Baltimore; died November 2, aged 75, of coronary thrombosis.

Alfred John Nixon, Taunton, Mass.; Boston University School of Medicine, 1894; died recently aged 80, of arteriosclerosis.

Arthur H. Northrup ⊕ Clearwater, Fla.; Medical College of Indiana, Indianapolis, 1904; member of the Indiana State Medical Association; died November 5, aged 70, of cerebral hemorrhage.

Aage Emanuel Olsen, Ann Arbor, Mich.; Detroit College of Medicine and Surgery, 1926; member of the American Medical Association and the New Mexico Medical Society; at one time Danish vice counsel for Michigan; died November 4, aged 46, of coronary thrombosis.

Mercer Cranor Parrott ⊕ Kinston, N. C.; Tulane University of Louisiana School of Medicine, New Orleans, 1917; fellow of the American College of Surgeons; chief surgeon and medical director of the Parrott Memorial Hospital; director of the First Citizens Bank; died November 17, aged 51, of coronary occlusion.

Irvin N. Paul, Perry, Iowa; the Hahnemann Medical College and Hospital, Chicago, 1885; died November 30, aged 86, of hypostatic pneumonia.

Robert Ernest Perdue, Norwalk, Conn.; Starling Medical College, Columbus, 1895; member of the American Medical Association; for many years health officer of Norwalk; died in the Norwalk Hospital recently, aged 70.

Victor Nathaniel Peterson ⊕ St. Paul; University of Minnesota College of Medicine and Surgery, Minneapolis, 1906; past president of St. Paul Surgical Society; died in the Bethesda Hospital November 28, aged 66, of carcinoma of the stomach.

Rocco Joseph Petrucelli ⊕ Meriden, Conn.; Columbia University College of Physicians and Surgeons, New York, 1934; diplomate of the National Board of Medical Examiners; interned at the United Hospital in Port Chester, N. Y.; chairman of the board of health; physician in parochial schools; died in the Memorial Hospital, New York, November 27, aged 36.

Daniel Ward Philo, Fremont, Ohio; Physio-Medical College of Indiana, Indianapolis, 1901; Toledo Medical College, 1906; served during the Spanish-American War and World War I; died in a hospital at Miami, Fla., November 29, aged 72.

William Joseph Pulley ⊕ New York; Bellevue Hospital Medical College, New York, 1891; formerly clinical professor of medicine at the University and Bellevue Hospital Medical College, where he served as medical superintendent of the college clinic; consulting physician at the Riverside Hospital; died November 16, aged 76, of coronary occlusion.

Ernest Marion Ragsdale, Columbia, Tenn.; Vanderbilt University School of Medicine, Nashville, 1901; member of the American Medical Association; past president of the Maury County Medical Society; for many years resident physician for the Columbia Military Academy; died November 9, aged 65, of cerebral hemorrhage.

James Linton Rentfro ⊕ Brownsville, Texas; Louisville Medical College, 1907; in 1944 honored at a banquet given by the Matamoros Medical Association, Tamaulipas, Mexico, in recognition of his work among the Latin American people on both sides of the Rio Grande; on the staff of the Mercy Hospital; died November 11, aged 60, of coronary sclerosis.

George G. Richardson, Marion, Ind.; Medical College of Indiana, Indianapolis, 1905; member of the American Medical Association; served as county health officer; on the staff of the Marion General Hospital; died November 8, aged 64, of coronary thrombosis.

Thomas Richmond ⊕ Kansas City, Kan.; University Medical College of Kansas City, Mo., 1897; past president of the Wyandotte County Medical Society, serving as its treasurer for many years; served overseas during World War I; on the staffs of the Bethany, Providence and St. Margaret's hospitals; died November 4, aged 73, of coronary thrombosis.

Stonewall Jackson Rollow, Clarksville, Tenn.; University of Nashville Medical Department and Vanderbilt University School of Medicine, Nashville, 1887; served during World War I; died in the Veterans Administration Facility, Marion, November 26, aged 80, of heart disease.

J. H. Eugene Rosamond, Memphis, Tenn.; Louisville Medical College, 1902; specialist certified by the American Board of Pediatrics; member of the American Pediatric Society; fellow of the American College of Physicians; past president of the Tennessee Pediatric Society; at one time member of the council for the Southern Medical Association; died December 12, aged 65.

Douglas Rothschild, Detroit; Detroit College of Medicine, 1907; died November 1, aged 60, of carcinoma of the throat.

Maurice Shapiro ⊕ Bayonne, N. J.; University and Bellevue Hospital Medical College, New York, 1910; past president of the Hudson County Medical Society; formerly city physician and school physician; served as secretary of the board of directors and chief of clinics at Bayonne Hospital; formerly assistant attending dermatologist at the Bellevue Hospital in New York; consulting dermatologist at the Margaret Hague Maternity Hospital in Jersey City; died November 30, aged 57, of coronary occlusion and diabetes mellitus.

George Shorkley ⊕ Mount Vernon, Wash.; Hahnemann Medical College and Hospital of Philadelphia, 1899; served in the Spanish-American War, on the Mexican border and during World War I; on the staff of the Mount Vernon General Hospital; died November 30, aged 74, of coronary thrombosis.

Edwin F. Smith, Lodi, Calif.; Ohio Medical University, Columbus, 1896; died November 27, aged 75.

David Henderson Sprague, Central Valley, N. Y.; University of the City of New York Medical Department, New York, 1886; died November 25 of chronic bronchitis.

Charles William Stratton, Lee, Mass.; Albany (N. Y.) Medical College, 1905; member of the American Medical Association; died November 6, aged 69.

Henry Arthur Swan ⊕ Abilene, Texas; Baylor University College of Medicine, Dallas, 1914; died recently, aged 58.

John M. Triplett, Chapman, Neb.; Lincoln Medical College of Cotner University, 1909; chairman of the board of health; died November 4, aged 78, of arteriosclerosis.

George Washington Upton, Sherman, Maine; Dartmouth Medical School, Hanover, N. H., 1888; member of the American Medical Association; past president of the Aroostook County Medical Society; honorary member of the Maine Medical Association and in June 1937 was presented with its fifty-year service medal; died in the Madigan Memorial Hospital, Houlton, November 23, aged 80.

Walter Volke, Chicago; University of Chicago School of Medicine, 1939; interned at the Englewood Hospital; died in the Albert Merritt Billings Hospital October 5, aged 37, of coronary occlusion.

Alva Harding Warren ⊕ Malden, Mass.; Harvard Medical School, Boston, 1900; member of the New England Roentgen Ray Society and the American College of Radiology; specialist certified by the American Board of Radiology, Inc.; died November 19, aged 71, of pulmonary embolism.

Ossie Alexander Weatherly, Bluefield, W. Va.; Baltimore Medical College, 1909; member of the American Medical Association; medical examiner for the Norfolk and Western Railway Company; died November 27, aged 67, of coronary thrombosis.

Arthur Jay White, Scranton, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1923; member of the American Medical Association; formerly assistant superintendent of the Farview State Hospital, Waymart; died November 21, aged 55.

Charles Alphons Wingerter ⊕ Wheeling, W. Va.; Bellevue Hospital Medical College, New York, 1894; in 1910 member of the House of Delegates of the American Medical Association; past president of the West Virginia State Medical Association, of which he had been an honorary member; served during World War I; member of the board of trustees and member of the staff of the Wheeling Hospital, where he died November 2, aged 79, of cerebral thrombosis.

De'Laniel L. Yost, Fairmont, W. Va.; Indiana Eclectic Medical College, Indianapolis, 1889; died January 17, aged 84.

Capt. Allan Emmert Markowitz, M. C., A. U. S., 1916-1944

Capt. Manning Gunter, M. C., A. U. S., 1911-1945

Lieut. Carl L. Mango, M. C., A. U. S., 1907-1944

Ellen Alfieda Wallace ⊕ Concord, N. H.; Woman's Medical College of the New York Infirmary for Women and Children, New York, 1885; president emeritus of the New Hampshire Memorial Hospital, where she died November 2, aged 92, of cerebral thrombosis.

John Perry Young ⊕ Chester, S. C.; University of Maryland School of Medicine, Baltimore, 1894; Spanish-American War veteran; on the staff of the Pryor Hospital; died in North Charleston November 29, aged 75, of pneumonia and nephritis.

KILLED IN ACTION

Allan Emmert Markowitz, Abilene, Texas; University of Texas Faculty of Medicine, Galveston, 1939; interned at the City Hospital in Cleveland; served a residency at the Bradford Memorial Hospital for Babies in Dallas; began active duty as a first lieutenant in the medical reserve corps of the U. S. Army on July 1, 1941; promoted to captain; killed in action in the North African area Feb. 6, 1944, aged 27.

Manning Gunter ⊕ Globe, Ariz.; Columbia University College of Physicians and Surgeons, New York, 1938; born in Tucson, Ariz., on May 18, 1911; interned at the New York City Hospital in Welfare Island, New York; began active duty as a first lieutenant in the medical corps, Army of the United States, on May 13, 1942; served in Attu, landing with the first 200 troops; served with Seventh Medical Battalion and Seventh Division through all their campaigns in South Pacific, Leyte and Okinawa; promoted to captain; received Purple Heart and Presidential citation for merit; awarded the Bronze Star Medal "for heroic achievement in connection with military operations against the enemy on Nov. 25, 1944" and the Silver Star "for gallantry in action on May 5, 1945"; killed in action in the Pacific area May 5, 1945, aged 33.

Carl Louis Mango, Erie, Pa.; Temple University School of Medicine, Philadelphia, 1937; interned at the York Hospital in York and the Elizabeth General Hospital and Dispensary in Elizabeth, N. J.; began active duty in the medical reserve corps of the Army of the United States as a first lieutenant on March 15, 1941; killed in action in the Philippine Islands Dec. 14, 1944, aged 37, while a prisoner of war of the Japanese government

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 9, 1946.

Coordination of Special Hospitals for the Treatment of Cancer

In order to place its exceptional resources for treatment, teaching and research at the disposal of the patients and staff of other hospitals, and also to obtain a larger number of cases of the less common forms of cancer, the Royal Cancer Hospital has organized a plan for cooperation with London hospitals devoted to other specialties, such as diseases of the chest, eye, ear, nose and throat, gastrointestinal tract and nervous system. Patients referred by a cooperating hospital will be examined by a physician, surgeon, radiotherapist and clinical research assistant. The main lines of treatment will be outlined and the resources of the entire group of hospitals will be available for the patient. Surgical treatment will usually be carried out at the cooperating hospitals, but patients can be freely transferred for surgery, radiotherapy or chemotherapy. Cooperation has been further increased by the appointment of members of the staff of some of the special hospitals to the staff and medical committee of the cancer hospital and the converse. A cooperating hospitals committee has been set up under the chairmanship of Lord Horder to coordinate the cancer work in the group of hospitals and to give advice with regard to its future expansion. The number of new cases seen by the services has already passed 2,000 annually, which corresponds to the normal incidence of cancer in a population of 2,000,000. An important feature of the service is that it has no local limits but is designed to deal with all forms of cancer including the most rare which are selected for treatment at the specialized hospitals.

Epidemic of Virus B Influenza

An epidemic of influenza has been prevalent in Great Britain for a number of weeks. The weekly records of deaths from the disease have reached the highest level in two years. For the week ended January 26 there were 273 deaths in 126 large cities and 35 deaths in London. As a rule the attacks are mild and not attended by any serious complications. Serologic tests indicate that this epidemic is due to virus B influenza, which has not previously been incriminated in any widespread epidemic, though sporadic cases were found in 1939 and in a minor outbreak in 1943.

Retropubic Prostatectomy

At the Urological Section of the Royal Society of Medicine Mr. Terence Millin opened a discussion on retropubic prostatectomy, a new operative technic devised by him which was recently described in the *Lancet*. The operation has attracted much attention, since it appears to be an improvement on the many operations for removal of the enlarged prostate. It has the great advantage of being extravesicular, avoiding suprapubic drainage. It takes a relatively short time, does not involve or injure any organ, and has a singularly low mortality. In the 20 cases in which Mr. Millin has operated, there has not been a fatality. As all the obstructing tissue is removed, recurrence of obstruction is obviated.

A median 2½ to 3 inch suprapubic incision is made. The recti are separated and kept so by a modified Harris retractor; the posterior blade of the retractor presses the bladder upward and backward. The veins on the anterior and lateral aspects of the prostate are ligated. With a diathermy knife a transverse incision, convex downward, is made through the prevesical fascia and true prostatic capsule. The false capsule is exposed and an inverted V incision is carried down to the adenoma. The V shaped flap is elevated, and with curved dissecting scissors the lower margins of the lateral lobes of the enlarged prostate and, when present, the middle lobe are freed digitally from below upward. Enucleation is easily performed.

The comments of the urologists were favorable to the new operation. The president of the section, Mr. A. Wilfrid Adams, commended the technic of Mr. Millin, which removed the obstruction to bladder outflow directly. Mr. E. W. Riches praised the principles of direct approach and of enucleation from below but pointed out that the approach was through a vascular area, so that the operation was a bloody one. There was general agreement that the operation was not one for the inexperienced operator.

PARIS

(From Our Regular Correspondent)

Feb. 9, 1946.

Assistance to Mental Patients—Discussion of a New Law

Mental patients in occupied France were left in asylums to die from starvation and epidemics. The death rate rose 30 to 50 per cent. Immediately after the liberation psychiatric problems and especially the problem of caring for mental patients demanded immediate attention. Their care is still dictated by the law of 1838, which prescribes the confinement of acute and chronic mental patients in asylums.

Since the recognition and development of mental hygiene, there have been in France some wards for psychopathic patients, and in some large cities there are special hospitals and homes, such as the Henri Roussel Hospital, organized by Dr. Toulouse, one of the most prominent defenders of mental hygiene. In 1937 the name "maison d'aliénés" was changed to "psychiatric hospital" without any modification of the methods of treatment.

At a meeting of psychiatrists in which numerous specialists from all over France took part, a resolution for the abolition of the law of 1838 was unanimously adopted. They proposed to replace the "lunatic asylums" with a district (departmental) hospital system containing a security ward for dangerous patients with reeducation homes for alcoholic addicts and other toxicomaniacs and an organization for the placement of patients in families in the country and with medicopedagogic institutions for defective children. The difficulties are technical, as France cannot immediately create a sufficient number of psychiatric hospitals. There is also a shortage of the necessary psychiatrists. The first step is to establish psychiatric wards in the existing hospitals.

A discussion among psychiatrists is now taking place as to the law which should be substituted for the law of 1838. There are two main ideas to be noted among the several submitted to the Ministry of Public Health. The first, worked out by M. D. Abely and a group of psychiatrists, recommends the admission of every mental patient to the psychiatric hospital without any formality. These patients will be given two papers by the attending physician: an application for admission without diagnosis and a sealed letter for the psychiatrist containing the presumable diagnosis. Hospitalized patients will be given complete or restricted liberty, according to their condition. As to the management of their property, the legal forms will be either the appointment of a counselor as provisory administrator or of a trustee. The second plan has been advocated by Dr. Heyer, who in a recent article published in the *Médecin français* proposes that mental patients, with the exception of dangerous cases, should not be subjects of any particular legal measure and should be treated and granted every liberty consistent with their condition. Heyer is relying on his experiences as a psychiatrist practicing for twenty-five years and as official physician to the special infirmary of the Paris prefecture of police. He has found in his private practice that 2 to 3 patients out of 10 must be interned. In his ward at the special infirmary

9 out of 10 must be interned because of insufficient observation. He points to the example of Denmark, where only 2 per cent of mental patients are interned. The author insists that the use of private homes does not increase the danger of mercenary sequestration, so much feared by public opinion; unfortunately, private homes are accessible only to wealthy patients. According to the author the psychiatrist should not be concerned with administrative or legal questions but concentrate on modern treatment in the psychiatric wards which he proposes to organize in each district hospital. The new law will be incorporated in the new constitution, which is now being prepared by the Constitutional Assembly.

High Death Rate of Nurslings

Levesque and Bastin have called attention to the high death rate of babies under 1 year of age. This fact was also emphasized by the statistician Moine in his work entitled "Infancy in Danger," which indicated congenital weakness and premature birth as main causes of the high rate of infant mortality. The frequency of premature births has been pointed out by various authors, among them Dufour, medical inspector of the Bouches-du-Rhône district, who read a paper on this subject recently at a meeting of the congress for the Advancement of Science.

THE NETHERLANDS

(From Our Regular Correspondent)

AMSTERDAM, Jan. 31, 1945.

War Against Children

Infant mortality was exceptionally low in the prewar Netherlands. Individual hygiene and medical care must be credited for this progress during the last forty years. The Germans thoroughly altered this and performed a planned campaign against 20,000 Jewish children. Amsterdam pediatricians have medically evaluated the results of this cruelty. The first stage in the action was deportation to pooling camps. There an average of 200 mothers with infants were crowded into barracks without sanitation or ventilation. In smaller rooms 60 infants with a variety of diseases or infections were confined. Personnel, all prisoners, had to sleep and live in the same rooms. Unwashed towels were dried in the same room where "lavatories" stood, which were mortuary and kitchen at the same time. In the ward were children with whooping cough, measles, scarlet fever, malignant dysentery, pneumonia, nasopharyngitis and otitis media. They were starved rather than fed with food exposed to flies, coming from uncovered sick children, several of them in the same bed, without blankets or sheets. This was a major experiment to see what would happen after exposure to instead of isolation from various diseases prevalent among children. Efficient medical aid was forbidden, and even the mothers were prohibited from attending their dying little ones. As a result of this remarkable experiment most children began to be ill with dysentery of the Flexner type and to contract all the other diseases in varying sequence. Yet the death rate seemed too low; suddenly all the children were packed into trains, despite pyrexia up to 104 F. with pneumonia, even a 5 day old baby of 3 pounds (1,350 Gm.), and deported to Poland, where those who arrived living were murdered in the gas chambers. Enteric disease was the most frequent disease in the camps (doctors were not allowed to investigate for differential diagnosis) and otitis with mastoiditis.

Among the children of Amsterdam the death rate began to mount in 1944, owing to enteritis and to starvation of babies or to overfeeding with inadequate food. Mortality reached five times the normal level. Exact information is not available as to the nature of the enteric disease, although it might be related to epidemics that raged or still exist in western Europe. Liver damage was rather constant and a relation to a plague of flies apparent.

Other diseases of children were dystrophies due to starvation, but edema was exceptional in comparison with the adults. Serious war sequels are tuberculosis of children in increased frequency and congenital syphilis, reappearing now, whereas it had been almost extinct in the prewar Netherlands.

BELGIUM

(From Our Regular Correspondent)

Feb. 11, 1946.

International Committee of Military Medicine and Pharmacy

A meeting of the International Committee of Military Medicine and Pharmacy was held in Brussels Nov. 19 and 20, 1945. The International Committee accepted the invitation of the Swiss Federal Government to hold the eleventh congress in Switzerland in 1947. The following subjects were on the program of this congress: 1. Methods of resuscitation of the injured; reporters, England, France and Jugoslavia. 2. General review of modern procedures for prophylaxis of epidemic diseases in armies; reporters, the United States, Switzerland and Great Britain. 3. Modern methods of evacuation of the wounded and sick: indications and contraindications; reporters, Canada, Russia and Poland. 4. Participation of military physicians in the moral and physical welfare of the soldier; reporters, Belgium, France and Switzerland. 5. Comparative study of methods and apparatus for the determination of the hydrogen ion concentration with a view of their employment in the pharmaceutical laboratories of armies; reporters, Switzerland, France and Brazil. The following resolution was sent to the International Committee of the Red Cross in Geneva: "The International Committee of Military Medicine and Pharmacy meeting on Nov. 19, 1945 in Brussels begs the International Committee of the Red Cross to examine the question of medical personnel of armies protected by the Geneva Convention who are still in captivity and to use its great influence in their interest. It appears indeed opportune to consider with a purely disinterested and humanitarian aim the release of physicians and medical personnel who remain prisoners, who have been prisoners for a long time and who have not failed in their soldierly duties and honor."

The Health Control of Workers

A regent's decree will soon be published which regulates medical service in industrial enterprises. Beginning January 1 all enterprises (industrial, commercial and public service) must provide at their own expense medical service consisting of a complete examination at the time of hiring (analyses and roentgenologic examinations) and a periodic examination of the working personnel. The examination of adolescents is to take place every year and is to be carried out in the same manner as at the time of first employment. For adult workers examinations at variable intervals are permissible, depending on the type of employment. The interval may vary from one month to two years. The physician must make out an individual report after each examination. He has at his disposal for this purpose special and not very complicated forms. A copy of this report comprising the medical observations and especially the diagnosis is sent to the provincial health inspector. The employer is not to know the nature of the disorder detected in a member of his personnel. The physician must likewise keep a health record which must accompany the worker throughout his life as a worker. The employer has free choice of a medical examiner. He can, however, be put under obligation to change him at the request of the worker's physician in cases in which the medical examiner "does not observe the instructions concerning the health control of the workers or refuses to furnish the administration with information which is necessary to assure the observation of the prescriptions of the present decree."

MEXICO

(From Our Regular Correspondent)

Jan. 5, 1946.

Eradication of Smallpox in Mexico

During the conquest of Mexico smallpox was introduced by a Negro slave named Francisco Eguía, who came with the forces of Panfilo de Narvaez sent from Cuba to fight and punish Hernán Cortés. Since that time Mexico has paid a heavy toll. The "cocoliztli," as it was called by the Aztecs, has caused millions of deaths. Baron Alejandro von Humboldt stated that the disease killed more Indians than the cannons and muskets of the Spaniards. According to this author the number of deaths caused by smallpox amounted to two millions during the period of 1555-1556 in the territory occupied now by the Federal District and the states of Mexico, Michoacan, Puebla and Oaxaca. Subsequently several local epidemics were registered in the different parts of New Spain. The most important ones were those which occurred in 1763-1769, 1779, 1798, 1814 and 1829. Later, since the introduction of the Jenner vaccine on July 24, 1804 by Dr. Francisco Xavier de Balmis and Dr. Antonino Gutierrez the different governments have been fighting the plague with relative success. During the preceding and present administrations, smallpox has been attacked intensively in such a way that at the present time it is almost absent. In some states such as Yucatán, Campeche, Chiapas, Tabasco and others in the southeast not 1 case has been registered during the last five years.

Mortality Rate for Smallpox in Mexico

Year	*Population (Calculated)*	Number of *Deaths*	Rate per *100,000*
1940	19,759,112	1,341	6.8
1941	20,075,793	2,529	12.6
1942	20,392,473	4,115	20.2
1943	20,709,154	3,738	18.0
1944	21,025,835	2,252	10.8
1945	21,342,516	813	3.8

The mortality rate for smallpox during the last six years in Mexico is given in the accompanying table.

The mortality rate up to November 1945 was 0 to 5 per hundred thousand inhabitants in the Federal District, the territories and twenty-four states, 5.1 to 10 in Nayarit and Jalisco, 20 in the state of Hidalgo and 30 per hundred thousand of population in the state of Guanajuato in the central plateau.

Since the middle of 1945 not a single case of smallpox has been reported in many states, although vaccination was quite difficult in the mountainous regions and native villages. The immunization rate varies from 90 per cent in the urban districts to 60-70 per cent among the rural population. The public health and welfare authorities hope to banish smallpox forever during the first quarter of 1946.

Whooping Cough Immunization

Whooping cough is considered in Mexico a major cause of death of patients over 9 years of age. The disease kills in this country fourteen times more children than diphtheria, seven times more than smallpox, typhoid and syphilis and one and a half times as many as measles and bronchitis. During the four years ended December 1944 Dr. Miguel F. Bustamante, in charge of the Laboratory of Epidemiology and Biostatistics of the Institute of Public Health and Tropical Diseases, carried on a series of experimental immunizations against pertussis, using 7 cc. of Kendrick's vaccine in treating a group of 982 children. Another group of 589 children was used as a control. The environmental, social and living conditions were the same for the two groups. The average age among the children in the immunized group was 19.49 months and in the control group 20.19. The mean duration of the experiment was 21.74 and 21.99 months for each group respectively. The mean number of members per family was 5.3 and 5.2. According to the studies made, the results obtained by Dr. Bustamante and his co-workers were 1.92 person-months attacks per hundred months' experience in the immunized children against 8.66 in the control group, i. e. a difference of 6.74 ± 0.18, which is significant. The rate of attack per year in the first group was 1.8 against 5.8 in the control group. In this experiment the effective protection among vaccinated children was 75 per cent, with an annual attack rate of 2.8 per cent as compared to 5.5 per cent in the second group.

Committee for the Standardization of Laboratory Methods

A meeting was held on January 3, 1946 in the office of the undersecretary of public health and welfare to appoint a committee for the standardization of laboratory procedures. The committee appointed consists of the following section chairmen: Dr. Gustavo Argil, Section of Pathologic Biochemistry; Dr. Ernesto Cervera, director of the Institute of Hygiene, Section of Microbiologic Methods and Technics; Dr. Manuel Martinez Baez, Clinical Pathology; Dr. Ignacio González Guzmán, dean of the National School of Medicine, Hematology; Dr. Tomas G. Perrin, Serology, and Dr. Fernando Ocaranza, chief of the Division of Laboratories, Public Health Laboratories. Dr. Manuel Martínez Baez, Undersecretary of Public Health and Welfare, will act as president.

Courses in the School of Public Health and Hygiene

On December 17 in the Auditorium of the National School of Public Health and Hygiene, the annual ceremony to close the activities of the academic year took place, presided over by Dr. Gustavo Baz, secretary of public health and welfare. The speakers included Dr. Manuel Martínez Baez, undersecretary of public health and welfare, Dr. Angel de la Garza Brito, dean of the National School of Public Health and Hygiene, and Dr. Ernesto Molina of Colombia. Degrees of Master of Public Health were granted to nineteen students (five from Colombia), and certificates of attendance were given to ninety-seven public health nurses, thirty-four sanitary inspectors and nine physicians who attended a short course on malariology.

Marriages

STANLEY H. HOFFMAN, Glenn Dale, Md., to Wave Lieut. (jg) Teresa R. Blumberg of Terre Haute, Ind., in Washington, D. C., December 29.

CHARLES MONROE LANDMESSER, Lakeland, Fla., to Miss Jessie Norwood Jeffers in Florence, S. C., November 3.

EMORY CLIFTON KINDER, Kingstree, S. C., to Mrs. Hilda Whitaker Purse of Chattanooga, Tenn., recently.

CHARLES KENDALL DONEGAN to Miss Margaret Graham Mangum, both of Durham, N. C., January 19.

MELVIN L. PETERS, Cameron, Mo., to Miss Gussie Gearhart of Princeton in Troy, Kan., December 24.

JOHN ALBERT REINECK, Norwalk, Ohio, to Miss Rosemary Brennan of Pacific, Mo., in November.

WAYNE JOHN FENCIL, Monroe, Wis., to Miss Mary Jane Doherty in Milwaukee, December 26.

GEORGE S. KING to Miss Ruth C. Kahler, both of Bay Shore, N. Y., at Great Neck, January 10.

ALBERT H. VOEGELE to Miss Elaine Marie Schiller, both of Mansfield, Ohio, December 1.

EVANS WILLIAM PERNOKIS, Chicago, to Miss Olga Stuart of New York, December 30.

SOL Z. DRAZNIN, Chicago, to Miss Esther Bishop of Green Bay, Wis., January 3.

HERMAN L. KRETSCHMER to Mrs. Marion Ellen Hicks, both of Chicago, March 3.

FREDERICK G. GAENSLEN, Milwaukee, to Miss Jeanne Sweet of Madison recently.

Correspondence

REFRIGERATION FOR CRUSHED FINGER

To the Editor:—In THE JOURNAL, Dec. 29, 1945, page 1296, an adverse reply is given to a navy lieutenant who inquired concerning his application of ice to a finger which had been crushed and nearly amputated. The theory contained in the reply seems fallacious, as cold preserves tissue by reducing its metabolism and diminishing the need for either arterial or venous circulation. It is also contrary to the unanimous experience in major surgery, such as the English adoption of refrigeration for crush injury of limbs, and the preservation of circulation or development of collateral circulation during weeks of icing (Mock; Nachlas; Crossman; Ottaway and Foote; literature by Allen, F. M.: *Am. J. Surg.* **68**:170 [May] 1945). The only 2 minor cases which I have encountered have been successful, as follows:

An Italian laborer aged 64 had his thumb nearly severed at the interphalangeal joint, the distal phalanx hanging only by a thin shred of skin. The doctor who saw him for me in my absence inquired if he should complete the amputation, but I advised by telephone to place the hand in a basin of cracked ice. Four hours later the parts were united by suture without drainage. The thumb was kept in ice for twenty-four hours and then changed to ice bags, which were gradually withdrawn during four days. The result was a complete functional thumb except for ankylosis of the interphalangeal joint.

A girl aged 5 years had her left ring finger chopped off with a hatchet. The cut was through the middle phalanx, and here also nothing but a thin bridge of skin remained. When I first saw the patient six hours after the accident, the severed part appeared very cyanotic and cadaveric. After suture, the finger was packed in ice for thirty-six hours by a unique method. The mother cut a hole in a rubber fountain syringe, so that the child's hand could be inserted and surrounded with ice, while the melting water drained out through the tubing into a pail on the floor. During the following days the important principle of gradual elevation of temperature was applied by using ice bags which were successively withdrawn. The outcome has been a perfect finger except for limitation of motion in the distal phalanx, which observers expect to be lessened by exercise and time.

It appeared improbable that the digit in either of these cases could have been saved by customary measures. As it is unreasonable to expect invariable success with any method, it seems proper to ask the lieutenant's critics whether any of them have any personal experience with reduced temperature or whether they know of any instance of deleterious effects from its proper use.

LYMAN WEEKS CROSSMAN, M.D., New York.

MEDICAL SURPLUS PROPERTY

To the Editor:—For your information the following: Being on terminal leave after five years of active duty and in need of equipment for my office, I took THE JOURNAL at its word and very optimistically made a visit to the Los Angeles branches of the Smaller War Plants Corporation, the War Assets Corporation, the Office of Surplus Property RFC et al. with the following results:

Page 282 of THE JOURNAL for February 2 gave the regional office as Pacific Mutual Building, Los Angeles. Arrival there disclosed a palatial setup with high powered appearing executives, as far as the eye could reach, ensconced behind heavy plate glass and mahogany. They could be seen only by appointment, I was informed by one of the young lady buffers holding forth at the mahogany barrier. On learning my business, however, she informed me that THE JOURNAL was 100 per cent wrong and that it would be necessary for me to go to another building in another part of town which specialized in surplus medical equipment. This building was situated on Seventh Street near Los Angeles Avenue.

This information was a lift, because that was just what I was looking for, the boys who specialized in medical equipment, just like THE JOURNAL said.

Now this office was a letdown after viewing the splendor of the other one, but there were long lines of veterans waiting to be seen and, I thought, now we are getting some place. As I got closer to the front of the line, though, my spirits sagged as I noticed those turned away from the desk sadly shaking their heads and muttering to themselves as they filed past. I consoled myself with the thought that these poor misguided unfortunates were no doubt in the wrong place trying to buy silly things like locomotives, amphibious adding machines and bulldozers; they should know that they ought to be up at the swank joint in the Pacific Mutual Building. I was now all goose pimples; I was only third man from the front, which gave me a chance to observe the gal behind the counter. She looked harassed and bedraggled, but it was almost noon and no doubt the poor girl was weak from hunger. But when my turn came she was still breathing, so I took a chance.

Now I hate to tell you this, Mr. Editor, but this gal said she didn't know where THE JOURNAL got its information, but there was no such thing as a listing of surplus medical equipment and, what's more, she doubted if there ever would be one. In spite of her weakened condition she was not unsympathetic, and she lowered her voice to tell me that this was the way it always was and so I gathered that it was just the same old runaround being given veterans everywhere. She did suggest that I could return that afternoon when a group class would be held on how to make an application, and I could then apply for the items I might be interested in. Then some day if they ever got those items they would notify me within the next few months.

I started to say "how the h—— can I make application when I don't know what you have for sale," but I thought better of it and decided to go back to the plush carpeted office in the Pacific Mutual Building, where the girls were better looking, and buy myself a tank or a small used destroyer at least.

JAY G. WANNER, Lieutenant Colonel, M. C., A. U. S.

CONTROLLED FOLLOW-UP STUDIES IN PSYCHIATRY

To the Editor:—The method of controlled follow-up studies is not utilized sufficiently in medical science. If it were, the literature would be burdened with far less unsubstantiated therapeutic claims and other so-called discoveries. Psychiatry, for many years backward as compared to the progress made in other medical specialties, is now utilizing this method more frequently. Such a study made by a New York commission to evaluate the effects of insulin shock therapy in schizophrenia was discussed in a recent issue of THE JOURNAL (Feb. 10, 1945, p. 334). Recent studies on convulsive shock therapy in the affective psychoses (manic-depressive and involutional melancholia) reveal important data not previously known, which would not have become available except by the utilization of controls (Ziskind, Eugene; Somerfeld-Ziskind, Esther, and Ziskind, Louis: Metrazol and Electric Convulsive Therapy of the Affective Psychoses, *Arch. Neurol. & Psychiat.* **53**:212 [March] 1945. Tillotson, K. J., and Sulzbach, Wolfgang: A Comparative Study and Evaluation of Electric Shock Therapy in Depressive States, *Am. J. Psychiat.* **101**:455 [Jan.] 1945).

It is especially important that the control and treated series include cases seen by the same investigators over the same period and under the same conditions since, particularly in the psychiatric field, diagnostic and therapeutic interpretations vary so much from person to person, place to place and time to time, and also since the selection of material often varies. The worst cases are segregated in state hospitals, whereas in private practice mixed degrees of severity are encountered.

In such a control series from the private practice of myself and associates, consisting of 88 treated and 109 untreated patients over a five year period, and contacted subsequently (the follow-up period averaged three and one-fourth years), successfully treated patients recovered in a much shortened period of time (three to six weeks) and the adequately treated patients were prevented from dying from suicide and exhaustion, whereas 12 per cent in the control series did die. It is of more than theoretical interest that, once the fatal cases were excluded from the series, the follow-up showed that just as many of the untreated cases (86 per cent) as the treated cases (88 per cent) automatically went on to recovery of the individual attack, although the duration of the illness was much longer in the untreated cases. Another revelation of the follow-up controlled study was the equality of the number of recurrences in both the treated and untreated cases (18 and 21 per cent respectively), demonstrating that, although the treatments are beneficial in shortening the individual attack of the manic-depressive psychoses, there is no effect on later recurrences. Another follow-up investigation (Tillotson and Sulzbach) on 138 cases of depression revealed a greater recovery rate in the 70 treated than in the 68 untreated cases. Discrepancies in the two studies were more apparent than real, for in the first the controls included many patients whose illness was considered too mild to treat. When correction was made for this factor (comparison restricted to those control cases in which treatment was recommended but refused) and the deceased patients were not excluded from the control series, the increase of individual recoveries in the treated cases approximated the second study.

These reports indicate the value of control follow-up series. Though admittedly difficult and often containing many variable factors, they still constitute the best known approach to evaluation of new therapies. More such studies will lead to refinement of technic and statistical computation, reducing the differences arising from the variable selection of material.

EUGENE ZISKIND, M.D., Los Angeles.

"THE PELLAGRA PROBLEM"

To the Editor:—I have read your editorial on "The Pellagra Problem" (THE JOURNAL, Nov. 24, 1945, p. 874) with great interest. You mention the suggestion by Krehl, Teply, Sarma and Elvehjem (*Science* **101**:489 [May 11] 1945) "that the synthesis of niacin by the intestinal flora may be involved." You do not mention that production and release of nicotinamide by the intestinal flora in man has been shown by myself and my co-workers (Ellinger, P., and Coulson, R. A.: *Biochem. J.* **38**:265 [No. 3] 1944. Ellinger, P.; Coulson, R. A., and Benesch, R.: *Nature* **154**:270 [Aug. 26] 1944. Ellinger, P.; Benesch, R., and Kay, W. W.: *Lancet* **1**:432 [April 7] 1945. Ellinger, P.: *Nature* **155**:319 [March 17] 1945); up to 100 per cent (in the average 60 per cent) of the daily nicotinamide requirements of man can be synthesized by the flora of the intestinal tract; the obvious conclusions concerning the etiology and cure of pellagra have been discussed in the papers mentioned.

I am surprised that your editorial writer had not noticed these papers, which have received publicity in editorials in the *Lancet* and *British Medical Journal* and also one by American workers (Briggs, A. P.; Singal, S. A., and Sydenstricker, V. P.: *J. Nutrition* **29**:331 [May] 1945) in which the same function of the intestinal flora is suggested. In the interest of chronological accuracy I think these omissions should be noted in the pages of THE JOURNAL.

P. ELLINGER,
Lister Institute of Preventive Medicine,
London, S.W. 1.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Board in Specialties were published in THE JOURNAL, March 2, page 601.

BOARDS OF MEDICAL EXAMINERS

ALABAMA: Mar. 19-21. Sec. Dr. B. F. Austin, 519 Dexter Ave., Montgomery 4.

ARIZONA: * *Examination.* Phoenix, April 2-3. *Endorsement.* Phoenix, April 6. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

ARKANSAS: * *Medical.* Little Rock, June 6-7. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, June 6. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

CALIFORNIA: *Written.* Los Angeles, March 11-14. Sec., Dr. Frederick N. Scatena, 1020 N St., Sacramento 14.

COLORADO: * Denver, April 2-5. Final date for filing application is March 18. Sec., Dr. J. B. Davis, 831 Republic Bldg., Denver.

CONNECTICUT: * *Medical. Examination.* New Haven, March 12-13. *Endorsement.* New Haven, March 26. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven. *Homeopathic.* Derby, March 12-13. Sec., Dr. Joseph H. Evans, 1488 Chapel St., New Haven.

DELAWARE: *Examination.* Dover, April 9. *Reciprocity.* Dover, April 16. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

DISTRICT OF COLUMBIA: * *Reciprocity.* Washington, March 11. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

FLORIDA: * Jacksonville, June 24-25. Sec., Dr. Harold D. Van Schaik, 2736 S.W. Seventh Ave., Miami 36.

GEORGIA: Atlanta and Augusta, March 27-28. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

HAWAII: Honolulu, July 8-11. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

IDAHO: Boise, July 9. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.

ILLINOIS: *Examination.* Chicago, April 2-3. *Reciprocity.* Chicago, April 4. Supt. of Registration, Department of Registration & Education, Mr. Philip Harman, Springfield.

INDIANA: Indianapolis, April 25-27. Sec., Board of Medical Registration & Examination, Dr. W. C. Moore, 301 State House, Indianapolis 4.

IOWA: * Iowa City, March 25-27. Dir., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

KANSAS: Kansas City, March 12-13. Sec., Board of Medical Registration and Examination, Dr. J. F. Hassig, 905 N. Seventh St., Kansas City 10.

KENTUCKY: Louisville, March 25-27. Sec., State Board of Health, Dr. Philip E. Blackerby, 620 S. Third St., Louisville 2.

MAINE: Portland, March 12-13. Sec., Board of Registration of Medicine, Dr. A. P. Leighton, 192 State St., Portland.

MARYLAND: *Medical.* Baltimore, March 19-22. Sec., Dr. J. T. O'Mara, 1215 Cathedral St., Baltimore 1. *Homeopathic.* Baltimore, June 18-19. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

MASSACHUSETTS: Boston, March 12-15. Sec., Board of Registration in Medicine, Dr. H. Q. Gallupe, 413-F State House, Boston.

MICHIGAN: * Detroit, March 26-28. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

MISSISSIPPI: June. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson 113.

MONTANA: Helena, April 1-3. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

NEBRASKA: * Omaha, March 25-27. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

NEW JERSEY: Trenton, June 18-19. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO: * Santa Fe, April 8-9. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 24-27. Sec., Dr. Jacob L. Lochner, Education Bldg., Albany.

NORTH CAROLINA: Raleigh, March 25-28. Act. Sec., Mrs. Louise J. McNeill, 226 Hillsboro St., Raleigh.

NORTH DAKOTA: Grand Forks, July 2-5. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OHIO: *Examination.* Columbus, March 19-22. Sec., Dr. H. M. Platter, 21 W. Broad St., Columbus.

OKLAHOMA: * Oklahoma City, March 23. Sec., Dr. J. D. Osborn Jr., Frederick.

PENNSYLVANIA: Philadelphia and Pittsburgh, April. Act. Sec., Bureau of Professional Lic[illegible] [illegible]lic Instruction, Mrs. M. G. Steiner, 351 Educ[illegible]

RHODE ISLAND: Providence, April 4-5. Chief, Division of Examiners, Mr. Thomas B. Casey, 366 State Office Bldg., Providence.

SOUTH DAKOTA: * Pierre, July 16-17. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

TENNESSEE: * Memphis and Nashville, March 27-29. Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis 3.

TEXAS: Austin, March 27-29. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

VERMONT: Burlington, March or April. Sec., Dr. F. J. Lawliss, Richford.

VIRGINIA:* Richmond, March 25-28. Sec., Dr. J. W. Preston, 803 Medical Arts Bldg., Roanoke.

WASHINGTON:* Seattle, July 11-12. Sec., Department of Licenses, Miss Nell Adams, Olympia.

WEST VIRGINIA: Charleston, April 1-3. Commissioner, Public Health Council, Dr. John E. Offner, State Capitol, Charleston 5.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

DISTRICT OF COLUMBIA: Washington, April 22-23. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

FLORIDA: Gainesville, June 4. Final date for filing application is May 20. Sec. Dr. J. F. Conn, John B. Stetson University, DeLand.

IOWA: Des Moines, April 9. Dir., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

MICHIGAN: Ann Arbor and Detroit, May 10-11. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

MINNESOTA: Minneapolis, April 2-3. Sec., Dr. Raymond N. Bieter, 126 Millard Hall, University of Minnesota, Minneapolis 14.

NEBRASKA: Omaha, May 7-8. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

SOUTH DAKOTA: Vermillion, March 13-14. Sec., Dr. G. M. Evans, Yankton.

TENNESSEE: Memphis and Nashville, March 25-26. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

WISCONSIN: Madison, April 6. Prof. R. N. Bauer, 152 W. Wisconsin Ave., Milwaukee 3.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: General Release of Primary Cause of Action Held Release of Claim of Intervening Malpractice.—The plaintiff physician filed suit for a declaratory judgment as to the legal effect of a general release which the defendant executed in favor of the Minneapolis Street Railway Company in settlement for injuries received in a street car accident. From a judgment in favor of the physician the defendant appealed to the Supreme Court of Minnesota.

The defendant was injured while alighting from a street car and engaged the plaintiff physician to treat her injuries. Part of the treatment involved the use of an electrical apparatus and defendant claimed she received burns therefrom. In a subsequent action against the street car company, after a verdict in her favor, she entered into a stipulation by the terms of which she released and discharged the street car company "from all claims, demands, actions or causes of action, for all injuries or damages, whether at this time known or unknown, arising or to grow out of the said accident referred to above." In neither the pleading nor trial of that case did the defendant mention any burns she suffered as a result of the plaintiff's negligence. Prior to the termination of her suit against the street car company, the defendant commenced a malpractice action against the plaintiff. After the stipulation in the street car company case was filed, the plaintiff filed an amended answer in the malpractice action to the effect that the release to the street car company released the defendant's whole cause of action, including the claim for malpractice against the plaintiff. Subsequently, by means of various proceedings to which the plaintiff was not a party, the defendant attempted to avoid the effect of her general release. Plaintiff therefore filed this suit for a determination of the rights of the parties.

The Supreme Court said that where one person is injured by the wrong or negligence of another, and the injured person himself is not negligent in the selection of a medical attendant, the wrongdoer is liable for all the proximate results of his own act, although the consequences of the injury would have been less serious than they proved to be if the attendant had exercised proper professional skill and care. The defendant admitted that such was the law but urged that this case was an exception. She argued that since, in the street car case, no claim or mention was made of any burns received during the treatment for her injuries, therefore the only recovery that she made against the street railway company was for the injuries she sustained through the negligence of the company and consequently the release and satisfaction could not possibly have included the injuries for malpractice. She suggests that the basis for the rule set forth by the court is to prevent one person from recovering twice for the same injury, and that in this case no basis for the rule exists since she could not possibly recover for the same injury because she refrained from claiming or proving aggravation of her injuries through malpractice.

The Supreme Court admitted that the defendant presented a plausible argument but pointed out that her general release operated not only in personam on the street car company and its liability but also in rem on her own cause of action. The decisive thing now, said the court, is not whether the plaintiff actually released this defendant, or intended to do so, or got full compensation, but rather and only whether she has discharged her whole cause of action. This, concluded the Supreme Court, she did do. If the instrument is in fact a release, it discharges all parties liable for the injury. If, in such a case as this, it is desired to come to an accommodation with the original wrongdoer, saving to the injured person a cause of action, if any, against the attending physician or surgeon, it may be done by the use of a convenant not to sue. Accordingly the judgment of the trial court in favor of the plaintiff was affirmed.—*Benesh v. Garvais, 20 N. W. (2d) 532 (Minn., 1945).*

Life Insurance: Physical Manifestations of Sunstroke Not Visible Wounds or Contusions.—The plaintiff sued to recover under the double indemnity provisions of a life insurance policy issued to her deceased husband, who died as the result of a sunstroke. From a judgment in her favor the defendant insurance company appealed to the circuit court of appeals, tenth circuit.

The policy provided that

> If the death of the insured . . . results directly and independently of all other causes from bodily injuries effected solely through external, violent and accidental means, . . . and if such accident . . . is evidenced by a visible contusion or wound on the exterior of the body, the sum insured provided on the first page of the attached policy will be doubled.

According to the agreed facts the deceased, shortly before he died, became pale, remarked that he felt a "hot spell or something" coming over him and immediately went to bed. His clothes were wet with perspiration and he complained of smothering to death and of pains in his arms. His face was a pale yellow, his lips were blue and swollen, his eyes were glassy and the pupils dilated, he vomited blood, and hot fluid flowed from his nose. Just before death occurred his "skin had turned blue practically all over his body."

Under established Oklahoma law, the court pointed out, it is well settled that sunstroke is an accident effected solely through external, violent and accidental means. The question is whether or not the facts show a "visible contusion or wound on the exterior of the body." The court pointed out that in many of the cases relied on by the plaintiff the insurance policy required a "visible mark or evidence of injury" or language meaning substantially that. Under such a proviso, said the court, we would have no difficulty in concluding that there were visible marks and evidence of an injury. The insurance policy in question, however, requires a "wound" or "contusion" on the exterior of the body. The words "wounds" and "contusions," concluded the court, have well defined and understood meanings. The commonly understood and accepted meaning of the word "wound" is an injury to a person in which the skin or other membrane is broken, as by violence or surgery. "Contusion" is commonly defined as a bruise affecting subcutaneous tissue without breaking the skin. "Contusion," in its ordinarily accepted meaning, is synonymous with "bruise." It is difficult to think of pallor, perspiration, dilated pupils or a bluish tint to the skin immediately preceding death, said the court of appeals, as either wounds or contusions. To so hold would, in our opinion, do violence to the ordinarily accepted meaning of these terms as they are understood by intelligent persons. Accordingly the judgment in favor of the plaintiff was reversed and the cause remanded with direction to enter judgment in favor of the insurance company.—*Paul Revere Life Insurance Company, Worcester, Mass., v. Stanfield, 151 F. (2d) 776 (1945).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied by stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

30:427-538 (Nov.) 1945

*Syndrome of Bernheim. H. I. Russek and B. L. Zohman.—p. 427.
Peripheral Vascular Changes in Dermatomyositis. J. J. Silverman and V. E. Powell.—p. 441.
The Recruit's Heart: Reduplication of First Sound: Heart Strain and New Method of Calibration. J. S. Lewis.—p. 447.
*Traumatic Injury of Heart: Incidence of Occurrence in 42 Cases of Severe Accidental Bodily Injury. L. H. Sigler.—p. 459.
*Studies Concerning the Etiology and Pathogenesis of Neurocirculatory Asthenia: III. Cardiovascular Manifestations of Neurocirculatory Asthenia. M. Friedman.—p. 478.
Pulmonary Stenosis with Intact Interventricular Septum: Report of 11 Cases. J. H. Currens, T. D. Kinney and P. D. White.—p. 491.
Note on Serologic Classification of Streptococci Isolated from Subacute Bacterial Endocarditis. S. M. Wheeler and G. E. Foley.—p. 511.

Syndrome of Bernheim.—Russek and Zohmann present observations on 3 cases of Bernheim's syndrome, 2 of which were diagnosed during life and confirmed at necropsy and 1 discovered on postmortem examination. The diagnosis is suggested when a person with left ventricular hypertrophy shows signs of right heart failure as the first indication of circulatory embarrassment. The "right heart failure" is not due to myocardial weakness but results from obstruction to blood flow through the right ventricle. Dyspnea and other signs of pulmonary congestion are conspicuously absent or minimal until the terminal stage of the disease, when failure of the left ventricle finally supervenes. The circulation time may remain within normal limits for some time while the venous pressure is appreciably elevated. Fluoroscopy may be helpful in demonstrating enlargement of the left ventricle and right auricle with normal size of the other two chambers. The bulging and thickened interventricular septum may influence the electrical axis of the heart and even be responsible for unexpected right axis deviation in cases of left ventricular hypertrophy. The syndrome of Bernheim may occur in any condition causing left ventricular hypertrophy and dilatation.

Traumatic Injury of Heart in Bodily Injuries.—Sigler studied 39 cases of accidental injuries of the body in admissions to the surgical wards of the Coney Island Hospital and in 3 cases from other sources. In 32 of these 42 cases there was demonstrable evidence of some cardiac damage, clinical, electrocardiographic or both. In some cases the damage occurred even if the blow did not affect the chest, provided it was of sufficient severity to result in grave bodily injury. In most cases the damage appeared to be mild and of short duration. Subjective manifestations referable to the heart were trivial or absent. Precordial pain or discomfort and slight dyspnea were the main complaints. The objective manifestations consisted of abnormalities in the heart sounds, the presence of a gallop rhythm, a pericardial friction rub and systolic murmurs in various areas. The findings were transient and occurred in comparatively few cases. The electrocardiographic manifestations consisted of changes in the voltage and appearance of the QRS complex from time to time and some shift in the electrical axis; elevation, rounding with upward concavity and occasional coving of the RT segment, and frequent changes in the T wave from positive to isoelectric and negative and back to positive. In the majority of cases the electrocardiographic changes were nonspecific. In occasional cases they were characteristic of pericardial involvement or of localization of the damage to other specific areas of the heart. Complete recovery took place in nearly all cases in this series. Only 1 case showed permanent damage and in another case the cardiac injury was at least partly responsible for death.

Cardiovascular Manifestations of Neurocirculatory Asthenia.—Friedman studied the cardiovascular manifestations of neurocirculatory asthenia in 50 cases. He found the heart in neurocirculatory asthenia to be normal in size, structure and function at rest and during effort if unaccompanied by emotional activity. Changes in the rate, rhythm and force of cardiac contractions were observed when preceded by or associated with excitation of the sympathetic nervous system. This phenomenon was observed during a natural exacerbation of the syndrome or following the administration of suitable drugs. Evidence was obtained which suggested that the excitation of the sympathetic nervous system, preceding or associated in a causal fashion with the cardiovascular manifestations of neurocirculatory asthenia, resulted from hypothalamic discharge.

American Journal of Diseases of Children, Chicago

70:201-262 (Oct.) 1945

*Infectivity of Primary Complex of Tuberculosis of Childhood. W. H. Feldman and H. F. Helmholz.—p. 201.
Streptococci ("Enterococci") of Lancefield Group D: II. Recovery of Lancefield Group D Streptococci from Antemortem and Postmortem Cultures from Infants and Young Children. S. M. Wheeler and G. E. Foley.—p. 207.
Nutrition Studies on Children Living at Home: I. Calory Intakes on Basis of Age from 1 Through 10 Years. Virginia A. Beal, Bertha S. Burke and H. C. Stuart.—p. 214.
Basal Metabolism of Eight Nursery School Children Determined at Three Month Intervals. Mina W. Lamb.—p. 220.
Histoplasmosis in Children: Review of Literature, with Report of Case. A. M. Iams, M. M. Tenen and H. F. Flanagan.—p. 229.

Infectivity of Primary Tuberculous Complex of Childhood.—Feldman and Helmholz examined during a six year period lesions of primary pulmonary tuberculosis for the presence of virulent tubercle bacilli in 29 children dying of causes other than tuberculosis. Each specimen was used to inoculate 2 guinea pigs, and the results were observed at necropsy eight weeks later. In only 5 of 29 patients were virulent tubercle bacilli demonstrated. The youngest child in whom virulent tubercle bacilli were found was an infant of 3 months, and the oldest in whom the results were positive was a child of 11 years. If the results of the study of this small series of cases are a true reflection of the state of infectivity of the lesion of the primary complex in children without concomitant tuberculous disease, one may conclude that the tubercle bacilli responsible for the primary lesions of pulmonary tuberculosis of childhood tend in most instances to become avirulent or to disappear.

Connecticut State Medical Journal, Hartford

9:911-1002 (Dec.) 1945

Experiences at Nagasaki, Japan. B. R. Harris and M. A. Stevens.—p. 913.
The 39th General Hospital. J. C. Fox Jr.—p. 918.
Pneumonia and Empyema Due to Beta Hemolytic Streptococcus. R. E. Durkee Jr.—p. 922.
New Arthroplasty for Small Joints. E. H. Crosby and R. E. Galasinski.—p. 926.

Indiana State Medical Assn. Journal, Indianapolis

38:439-482 (Nov.) 1945

Indiana State Medical Association. N. K. Forster.—p. 439.
Infectious Mononucleosis. W. D. Paul.—p. 444.
Upper Respiratory Infections in Children, with Special Reference to Involvement of Lymphoid Tissue. L. F. Swihart.—p. 448.
Prevention of Disability in Traumatic Conditions of Extremities. J. L. Lindquist.—p. 451.
Modern Anesthesia. R. A. Geider.—p. 454
"Tyer" Used in Gallbladder Surgery. F. E. Hagie.—p. 457.
Eye Examinations as Conducted in the Navy. D. H. Row.—p. 458.

38:483-580 (Dec.) 1945

The Medical Profession Today and Tomorrow. W. B. Miller.—p. 483.
General Treatment of Arthritis. L. T. Swaim.—p. 487.
Bronchiectasis. L. W. Nehil.—p. 492.
Pseudomyxoma Peritonei in Man Following Rupture of Retrocecal Mucocele. E. L. Fitzsimmons.—p. 494.
Artificially Induced Remission in Case of Subacute Bacterial Endocarditis. L. M. Sales.—p. 499.

Journal of Experimental Medicine, New York

82:297-374 (Nov.) 1945

Protective Action of Trypan Red Against Infection by Neurotropic Virus. H. G. Wood and I. I. Rusoff.—p. 297.

Maximal Hemoglobin and Plasma Protein Production Under Stimulus of Depletion. Frieda S. Robscheit-Robbins, L. L. Miller and G. H. Whipple.—p. 311.

Studies on Etiology of Primary Atypical Pneumonia: II. Properties of Virus Isolated and Propagated in Chick Embryos. M. D. Eaton, G. Meiklejohn, W. van Herick and Marilla Corey.—p. 317.

Id.: III. Specific Neutralization of Virus by Human Serum. M. D. Eaton, W. van Herick and G. Meiklejohn.—p. 329.

Mechanism of Augmenting Action of Mineral Oil on Antibody Production: Tissue Reactions and Antibody Response to Dysentery Vaccine in Saline and in Saline Lanolin Mineral Oil Emulsion. W. E. Ehrich, S. P. Halbert, E. Mertens and S. Mudd.—p. 343.

Hemoglobin Precipitation in Renal Tubules: Study of Its Causes and Effects. C. L. Yuile, M. A. Gold and E. G. Hinds.—p. 361.

Journal of Immunology, Baltimore

51:191-305 (Oct.) 1945

Spontaneous Loss of Specificity of Absorbed Immune Hemagglutinating Sera. W. C. Boyd, L. G. Boyd and Estelle R. Warshaver.—p. 191.

Standardization of Cardiolipin-Lecithin-Cholesterol Antigen in Complement Fixation Test for Syphilis. Elizabeth Maltaner and F. Maltaner.—p. 195.

Studies on A-Antigenic Polysaccharide from Abomasus of Cattle. E. Jorpes and T. Thaning.—p. 215.

Inhomogeneity of Urinary Human A-Substance. E. Jorpes and T. Thaning.—p. 221.

Distribution of Blood Groups, Subgroups and Rh Blood Types in Japanese. E. B. Miller and T. Taguchi.—p. 227.

Immunologic Studies on Scorpions. E. Grasset, A. Schaafsma and J. A. Hodgson.—p. 231.

Methods for Production of Alpha and Theta Toxins of Clostridium Welchi. M. H. Adams and E. D. Hendee.—p. 249.

Antigens of Shigella Sonnei. K. M. Wheeler and F. L. Mickle.—p. 257.

p-Aminobenzoic Acid Synthesis by Neisseria Gonorrheae in Relation to Clinical and Cultural Sulfonamide Resistance. M. Landy and Ruth B. Gerstung.—p. 269.

Specific Antigen Recovered from Tissues Infected with M. Paratuberculosis (Johne's Bacillus). B. Sigurdsson.—p. 279.

Effect of Environmental Temperature on Experimental Influenza in Mice. S. E. Sulkin.—p. 291.

Type Specificity of Immune Protection Against Shigella Paradysenteriae (Flexner). A. J. Weil and K. Farsetta.—p. 301.

Journal Industrial Hygiene & Toxicology, Baltimore

27:211-238 (Oct.) 1945

Irritating Vapors Produced by Burning Cellulosic Materials. W. H. Easton.—p. 211.

Evaluation of Urinary Lead Determinations: I. Significance of Specific Gravity. L. Levine and J. P. Fahy.—p. 217.

Sampling and Determination of Methanol in Air. G. W. Rogers.—p. 224.

Preparation of Microscopic Spheres from Quartz. A. Salazar and L. Silverman.—p. 231.

Control of Occupational Tuberculosis in Hospitals. L. Brahdy.—p. 234.

Journal of Investigative Dermatology, Baltimore

6:279-322 (Oct.) 1945

*Early Syphilis Resistant to Treatment with Penicillin: Report of Case. W. G. Tyson.—p. 279.

Experimental Studies on Chromoblastomycosis. R. D. Azulay.—p. 281.

Surface Active Agents: Chemical Types and Applications. H. C. Speel.—p. 293.

Hair Root Strength and Menstrual Cycle. W. L. Whitaker.—p. 305.

Evaluation of "Intraderm Sulfur" for Acne Vulgaris. G. M. MacKee, J. Wachtel, F. L. Karp and F. Herrmann.—p. 309.

Early Syphilis Resistant to Penicillin.—Tyson reports a case in which a penile ulcer appeared ten days after intercourse. At the time of examination, two weeks after appearance of the lesion, dark field examination revealed Treponema pallidum. The Kahn test was positive. Treatment consisted of thirty intramuscular injections of 80,000 units of penicillin, or a total of 2,400,000 units over a period of five days. The serologic test remained positive for several weeks and the penile lesion did not heal. An ulcer was still present when the serologic test became negative. When the serologic tests became positive again and secondary lesions appeared, treatment was repeated with 600,000 units of penicillin and eight hours of fever therapy. After this the penile lesion and secondary lesions healed. Spinal fluid examinations for syphilis were negative. It is significant that the patient, aged 24, responded to penicillin plus fever but apparently did not respond to penicillin alone.

Journal of Neurophysiology, Springfield, Ill.

8:341-474 (Nov.) 1945. **Partial Index**

Influence of Hypothalamic Stimulation on Cortically Induced Movements and on Action Potentials of Cortex. J. P. Murphy and E. Gellhorn.—p. 341.

Transsynaptic and Direct Stimulation of Postfibers in Artificial Synapse Formed by Severed Mammalian Nerve. C. R. Skoglund.—p. 365.

Localization of Premotor Interneurons Discharging Through Peroneal Nerve. C. G. Bernhard and B. Rexed.—p. 387.

Relations Between Multiple Innervation and "Segmental" Response of Skeletal Muscle of Dog. J. E. Markee and H. Löwenbach.—p. 409.

Anatomic and Physiologic Properties of Cutaneovisceral Vasomotor Reflex Arcs. A. Kuntz.—p. 421.

Relation of Electroencephalogram to Photometrically Observed Vasomotor Changes in Brain. C. W. Darrow and C. G. Graf.—p. 449.

Acoustic Projection System: Comparative Study. H. W. Ades and R. E. Felder.—p. 463.

Journal of Pharmacology & Exper. Therap., Baltimore

84:301-412 (Aug.) 1945

Studies on Analgesics: I. Time-Action Curves of Morphine, Codeine, Dilaudid and Demerol by Various Methods of Administration; II. Analgesic Activity of Acetylsalicylic Acid and Aminopyrine. N. Ercoli and M. N. Lewis.—p. 301.

Permeability of Mycobacteria to Sulfonamides and Sulfonamide-like Agents. D. Yegian and Vera Budd.—p. 318.

Studies on Shock Induced by Hemorrhage: XII. Some Properties of Naturally Occurring Inhibitor of d-Amino Acid Oxidase. Margaret E. Greig and W. E. De Turk.—p. 325.

Antithyroid Studies: I. Goitrogenic Activity of Some Thioureas, Pyrimidines and Miscellaneous Compounds. D. A. McGinty and W. G. Bywater.—p. 342.

Toxicity Studies on Benzyl Benzoate and Related Benzyl Compounds. B. E. Graham and M. H. Kuizenga.—p. 358.

Destruction by Tyrosinase of Irritant Principles of Poison Ivy and Related Toxicants. I. W. Sizer and Clemens E. Prokesch.—p. 363.

Isolation of Di (p-Chlorophenyl) Acetic Acid (DDA) from Urine of Rabbits Poisoned with 2,2 Bis (p-Chlorophenyl) 1,1,1 Trichlorethane (DDT). E. F. Stohlmand and M. I. Smith.—p. 375.

Comparative Study of Effectiveness of 1,3,7 Trimethylxanthine and Certain Dimethylxanthines (1,3 Dimethylxanthine and 3,7 Dimethylxanthine) Against Fatigue. F. Huidobro.—p. 380.

Pharmacologic Studies of Some Benzofuranone Derivatives. R. K. Richards, G. M. Everett and K. E. Kueter.—p. 387.

Michigan State Medical Society Journal, Lansing

44:1195-1242 (Nov.) 1945

Penicillin in Treatment of Syphilis. S. W. Becker.—p. 1195.

Recent Advances in Treatment of Syphilis. A. C. Curtis and G. Morrow.—p. 1198.

Treatment of Sulfonamide Resistant Gonorrhea with Penicillin as Clinic Routine. J. C. Dodds.—p. 1204.

Herniated Nucleus Pulposus. F. H. Mayfield.—p. 1206.

Significance of Rectal Hemorrhage. T. Wilensky.—p. 1209.

Nebraska State Medical Journal, Lincoln

30:417-456 (Dec.) 1945

Recent Trends in Neuropsychiatric Thinking and Practice. N. D. C. Lewis.—p. 420.

Mental Hygiene Needs in Nebraska. A. E. Bennett.—p. 425.

Thiouracil in Treatment of Hyperthyroidism. A. Sachs and R. L. Egan.—p. 431.

Malignant Lymphoma with Meningeal and Polyradicular Infiltration. G. A. Young, R. H. Young and W. M. Gysin.—p. 434.

New England Journal of Medicine, Boston

233:639-672 (Nov. 29) 1945

Nutritional Status of Civilians Rescued from Japanese Prison Camps. A. M. Butler, J. M. Ruffin, M. M. Sniffen and Mary E. Wickson.—p. 639.

*Therapeutic Measures in Rheumatic Fever: Comparative Study of 150 Cases. R. Gubner and M. Szucs.—p. 652.

Coronary Artery Disease Among Physicians. S. A. Levine and J. A. Hindle.—p. 657.

Surgical Emergencies of Alimentary Tract of Newborn. O. Swenson and W. E. Ladd.—p. 660.

Thrombosis of Mesenteric Veins. Chronic Myelogenous Leukemia.—p. 664.

Leiomyoma of Terminal Ileum.—p. 666.

Therapeutic Measures in Rheumatic Fever.—Gubner and Szucs analyzed the effects of various therapeutic measures in 150 cases of acute rheumatic fever. The treatments included sodium salicylate and sodium bicarbonate (33 cases), sodium salicylate and ascorbic acid (32 cases), calcium double salt of benzoic acid and succinic acid benzyl ester (55 cases), sulfathiazole (15 cases); penicillin (5 cases) and sodium bicarbonate alone (10 cases). Sulfathiazole, penicillin and sodium bicarbonate alone were without therapeutic effect. Striking difference was not evident in the two groups of patients receiving salicylate other than noteworthy diminution in toxicity in the patients receiving ascorbic acid in place of sodium bicarbonate. Comparison was made between the 65 patients given salicylate and the 55 receiving the succinate compound. The patients receiving the succinate compound and ascorbic acid responded more favorably than did those receiving salicylate. The duration of fever, leukocytosis and accelerated sedimentation rate, and total days of hospitalization were uniformly and significantly abbreviated. Signs of carditis developed in 69 per cent of the salicylate treated patients compared with 19 per cent of the succinate treated ones. Relapses of rheumatic activity occurred in 7 of the salicylate treated patients whereas relapses did not develop in those given succinate. Drug toxicity was noted in 19 per cent of the salicylate treated patients but in only 2 per cent of those receiving the succinate compound. Attention is called to the role of succinic acid as a catalyst in biologic oxidation. Evidence is cited that a widespread interference with various constituents involved in tissue oxidation occurs in rheumatic fever—that is, porphyrinuria, lowering of plasma ascorbic acid and vitamin A levels and changes in glutathione. It is suggested that there is an oxidative inactivation of various enzymes in this disease and that administration of succinates may not only prevent inhibition of succinic dehydrogenase (cytochrome C reductase) but as an active reducing agent may also prevent inactivation of other respiratory enzymes. Calcium and ascorbic acid enhance the activity of succinic dehydrogenase, and the administration of ascorbic acid as well as the calcium salt of the succinic acid compound studied therefore appears to be indicated.

New Jersey Medical Society Journal, Trenton

42:347-386 (Nov.) 1945

Acute Cor Pulmonale. H. Halprin and M. W. Shulman.—p. 353.
Modern Concepts in Clinical Hematology as Revealed by Peripheral, Bone Marrow and Splenic Aspirations. M. Morrison.—p. 358.

42:387-434 (Dec.) 1945

Streptococcus-Staphylococcus Combined Antigens in Treatment of Rheumatoid Arthritis (Streptococcus Toxin-Bacterial Suspension) with (Staphylococcus Toxoid-Bacterial Suspension). P. J. Warter, D. A. Donio and S. Horoschak.—p. 391.
Reducing Period of Postoperative Bed Rest. R. T. deHellebranth. —p. 399.
Treatment of Anginal Syndrome with Thiouracil. S. Ben-Asher.—p. 401.
Medical Care for Veterans. P. R. Hawley.—p. 406.

Ohio State Medical Journal, Columbus

41:1073-1184 (Dec.) 1945

Psittacosis as Cause of Atypical Pneumonia Penicillin Therapy. R. F. Parker.—p. 1097.
Dihydroergotamine (D. H. E. 45) in Treatment of Migraine: Preliminary Clinical Observations. M. D. Friedman and D. A. Friedman. —p. 1099.
*Allergenic Effect of Silica and Relation to Dyspnea in Silicosis. W. J. Habeeb.—p. 1101.
Preliminary Report: Low Calcium Treatment of Poliomyelitis. B. C. Wiley.—p. 1103.
Modification of Syncope Syndrome to Circulatory Shock. R. D. Barnard. —p. 1107.
Surgical Treatment of Gastric and Duodenal Ulcer. M. M. Zinninger. —p. 1115.
Perforation of Sigmoid Colon by Ingested Toothpick. F. G. Hamilton and J. F. Corrigan.—p. 1119.

Allergenic Effect of Silica.—Habeeb says that a new factor in silicotic dyspnea has recently come to light, namely bronchospasm. Administration of epinephrine relieves dyspnea and bronchospasm, whereas histamine causes dyspnea and wheezing due to bronchospasm in patients with silicosis. Eosinophilia is generally considered to be part of an allergic response, and, since a high percentage of patients with silicosis have a blood eosinophilia which is proportional to the extent of their disease, it seems safe to conclude that silica dust has allergenic properties. The author discusses such factors as fibrosis, emphysema, bronchospasm, capillary obstruction and dilatation and believes that all play a variable part in the respiratory disability.

Rhode Island Medical Journal, Providence

28:777-860 (Nov.) 1945

Pathology of Coronary Artery Sclerosis and Thrombosis. B. E. Clarke. —p. 791.
Recent Advances in Treatment of Acute Myocardial Infarction. A. J. Geiger.—p. 793.
Neuropsychiatric Aspects of Coronary Artery Disease. C. Binger. —p. 797.
Clinical Aspects of Acute Coronary Thrombosis. A. M. Burgess.—p. 799.
Medical Care for Veterans. J. E. Farrell.—p. 817.

Rocky Mountain Medical Journal, Denver

42:817-920 (Nov.) 1945

Treatment of Colles' Fracture. G. Whiston.—p. 833.
Nasal Hemorrhage in Daily Practice. R. Waldapfel.—p. 835.
Recovery from Cavernous Sinus Thrombosis and Staphylococcic Pneumonia by Combined Use of Penicillin, Sulfadiazine and Antistaphylococcus Serum: Case Report. T. P. Sears and F. L. Wilson.—p. 838.
Closure of Defect of Skull with Tantalum. P. R. Farrington.—p. 842.
Lung Resection for Chronic Pulmonary Infection. R. Davison.—p. 844.
Effects of Oxygen on Auriculoventricular Nodal Rhythm Following Acute Coronary Occlusion. H. A. Bradford.—p. 846.
Office Procedure—Penicillin Treatment for Gonorrhea in Four Hours—Male or Female. W. L. Chadwick.—p. 851.
Belle Bonfils Memorial Blood Bank. M. R. Rymer and E. R. Mugrage. —p. 852.

42:921-1002 (Dec.) 1945

Sodium Pentothal Anesthesia. H. B. Stein.—p. 938.
Skiodan as Contrast Medium in Uterosalpingography. L. W. Mason. —p. 942.
Technical "Pitfalls" in Thyroid Surgery. G. B. Kent and K. C. Sawyer. —p. 944.
Clinical Comparison of Methergine and Natural Ergonovine. L. C. Hepp and J. R. Evans.—p. 949.
*Failure of Vitamin K as Antidote in Dicumarol Poisoning. T. C. Bauerlein.—p. 950.
Prospect for Future Control of Tuberculosis. J. A. Cremer.—p. 952.

Failure of Vitamin K in Dicumarol Poisoning.—The case presented by Bauerlein indicates that vitamin K in large doses is in some cases without effect on the prothrombin level when it has been seriously affected by the use of dicumarol. A man aged 52, who had been treated for thrombophlebitis of the ankle by ligation of the saphenous vein, was given 100 mg. of dicumarol daily during subsequent painful swelling of the leg. Prothrombin estimations were not done. After thirteen doses of dicumarol the patient reported hematuria. The thrombophlebitis had subsided completely except that the thrombosed vein was still palpable. The patient was given a vitamin K preparation by vein and by mouth for several days, but hematuria persisted and the prothrombin time was prolonged until blood and fresh plasma transfusions were given. Fresh plasma undoubtedly is a good source of prothrombin. Bauerlein concludes that the administration of dicumarol without daily determination of the prothrombin time is an unwise procedure and may result in serious hemorrhage even in the absence of trauma. The tourniquet test becomes positive when the prothrombin time is definitely prolonged by the use of dicumarol. Large doses of vitamin K seemed to be without effect, at least within a six day period, in abolishing the prothrombin deficiency induced by dicumarol in the case observed here. Fresh plasma should be used to combat the hemorrhagic tendency due to dicumarol.

Tennessee State Medical Assn. Journal, Nashville

38:395-436 (Dec.) 1945

Essential Hypertension and Its Surgical Treatment. E. R. Donathan. —p. 395.
Importance of Minimal Tuberculosis. R. B. Turnbull.—p. 399.
Getting Maximum Benefit from Bed Rest in Treatment of Pulmonary Tuberculosis. Juanita D. Newman.—p. 402.
Serodiagnosis in Syphilis. R. H. Kampmeier.—p. 404.
Surgical Treatment of Hyperthyroidism. G. T. Howard Jr.—p. 410.

Texas State Journal of Medicine, Fort Worth

41:389-442 (Dec.) 1945

Should Our Doctors be Regimented? R. L. Thomas.—p. 396.
Organic Lesions Resulting from Emotional Stress. W. Dock.—p. 398.
Penicillin in Treatment of Congenital Syphilis. E. E. Wilkinson, W. H. Saunders and A. E. Hansen.—p. 401.
Tularemia: Report of 6 Cases of Tick Borne Origin. W. W. Lindahl, M. C. Ritota and T. B. Metzger.—p. 404.
Injury to Colon from Air Hose Inflation. R. J. White.—p. 406.
Postpartum Sterilization. A. T. Stewart.—p. 408.
Survey of Tuberculosis Observed at Freeman Clinic from 1934 to 1944 and Related Statistics. G. L. Hacker.—p. 410.
Diagnosis and Treatment of Ocular Neuroses. P. J. Leinfelder.—p. 414.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Urology, London

17:85-130 (Sept.) 1945

Glandular Nodule in Benign Glandular Enlargement of Prostate: Its Development and Cause. C. MacLeod.—p. 85.
Tubercle Bacilluria. C. J. Marshall.—p. 102.

Journal of Mental Science, London

91:411-584 (Oct.) 1945. Partial Index

*Neuropathologic Problems Arising from Prefrontal Leukotomy. A. Meyer and E. Beck.—p. 411.
Psychopathic Personality and Crime. W. N. East.—p. 426.
Delirious Disorientation: Law of Unfamiliar Mistaken for Familiar. M. Levin.—p. 447.
Neuroses in Firemen. E. Guttmann and A. A. Baker.—p. 454.
Explosive Rage Following Head Injury. R. S. Hooper, J. M. McGregor and P. W. Nathan.—p. 458.
Impulsive Psychopath: Clinical and Electrophysiologic Study. R. S. Hodge.—p. 472.
Kielder Experiment. R. R. Prewer.—p. 481.
Phantasies in Evacuated Children. F. Bodman, E. Stephen and L. K. Sambrook.—p. 499.
Depression in Parkinsonism Treated by Prefrontal Leukotomy. E. Schwarz.—p. 503.
Two Years' Experience of Female Schizophrenics Treated by Insulin Coma Therapy. Joyce McConnell.—p. 506.
Syndrome Associated with Left Hand Paralysis of Central Origin. R. Klein and P. P. Mallie.—p. 518.

Neuropathologic Problems After Prefrontal Leukotomy.—The material reviewed by Meyer and Beck consists of 7 cases of prefrontal leukotomy and an eighth case in which frontal lobectomy had been carried out on a mentally normal person with a basal meningioma. This last case has proved of great value as a test case for complete severance of fiber connections. In 2 further cases only macroscopic investigation was performed. All the patients who recovered showed little or moderate deterioration. Clinical complications did not interfere with recovery, and the operation itself produced circumscribed lesions uncomplicated by severe hemorrhage and softening. Among the 3 patients of the unrecovered group 1 (patient 5) was severely deteriorated. The 2 others (3 and 4) were little deteriorated and should have had a fair chance of recovery. However, in case 3 uremia, nicotinic acid deficiency and a senile condition of the brain must be considered as adverse factors. In case 4 the cut was placed too posteriorly, involving the agranular frontal cortex and the caudate nucleus. In addition, extensive hemorrhage had destroyed a considerable part of the white matter of the prefrontal lobe. In case 5 the cut was placed in too anterior a plane. As regards the recovered group, it is surprising how little damage was sufficient to produce a remarkable clinical improvement. The cut in these cases was incomplete with regard to severance of the thalamofrontal fibers. From this it follows that in suitable cases (in which deterioration has not occurred) a good recovery may follow surprisingly incomplete and circumscribed cuts in the white matter of the prefrontal lobe. Recovery may be prevented by an excessive lesion, either by cutting in too posterior a plane or by causing extensive hemorrhage. The avoidance of hemorrhage seems to be a major necessity. There is some evidence that the projection of thalamic fibers to the orbital region is of considerable strength, and that the cortex in front of the surgical lesion is not wholly unaffected. The center median nucleus of the thalamus displays in the human brain a considerable variation of cell density. Its significance requires further investigation. The only conclusion that can be drawn at present is that, under both normal and psychotic conditions, the center median nucleus is liable to considerable variations in cell density and spacing of cells, which apparently far exceed those seen in animal brains. This variability is of remarkable interest if one regards the nucleus as an association center within the thalamus, which itself appears to be one of the corner stones of what one might call the anatomic substrate of personality organization. It is the more remarkable, as previous work on individual architectural differences within the cerebral cortex has demonstrated the relative constancy of the cortical pattern.

South African Medical Journal, Cape Town

19:445-464 (Dec. 8) 1945. Partial Index

Forward Surgery of Abdominal War Wounds. J. F. P. Erasmus.—p. 446.
Doctors' Hobbies: Succulent Collecting. C. T. Villett.—p. 455.
*Sickle Cell Trait in the South African Bantu. A. Altmann.—p. 457.

Sickle Cell Trait in the South African Bantu.—Sickle cell anemia and the sickle cell trait seem to be rare in South Africa. Altmann desired to confirm this fact on a larger number of specimens of Bantu blood. Of 403 blood specimens of South African Bantus only 1 showed the sickle cell trait in a moist sealed preparation after twenty-four hours' incubation at 37 C. He concludes from this that the sickle trait, which is common in West African and American Negroes, is rare in the South African Bantu.

Nordisk Medicin, Gothenburg

25:339-378 (Feb. 23) 1945. Partial Index

Pathogenesis of Peptic Ulcer. E. Ask-Upmark.—p. 339.
Gastrointestinal Hemorrhages in Childhood. A. Njå.—p. 345.

Hospitalstidende

Embolism of Abdominal Aorta. E. Hagens and P. Fogh-Andersen. —p. 347.

Norsk Magasin for Lægevidenskapen

Miliary Bronchopneumonia, Subcutaneous and Mediastinal Emphysema. J. H. Vogt.—p. 357.
*Empyema and Chemotherapy. K. Aas.—p. 360.

Hygiea

Studies on Scabies. B. Heilesen.—p. 365.

Empyema and Chemotherapy.—Aas compared the 387 cases of pneumonia at Aker Sykehus treated with chemotherapy and 352 earlier cases. He found a reduction in the percentage of empyema as a result of chemotherapy and little change in the percentage of cases with exudates.

10:1831-1896 (June 14) 1941. Partial Index

Adiposity. R. Hatlehol.—p. 1832.

Hospitalstidende

*Patent Foramen Ovale and Embolia Paradoxa with Embolus in Foramen Ovale. B. Vimtrup.—p. 1839.

Norsk Magasin for Lægevidenskapen

Electrocardiographic Results in Older Persons. H. Laake.—p. 1858.

Hygiea

Critical Study of "Cerebral General Symptoms." Nils Antoni.—p. 1865.
*Malignant Granulocytopenia in Chronic Rheumatic Disorders. G. Edström. —p. 1873.
Treatment of Certain Fractures with Local Procaine Injections. J. Adams-Ray.—p. 1877.

Patent Foramen Ovale.—Vimtrup concludes that anatomically patent but functionally closed foramen ovale occurs in about 20 per cent of all adult persons and under ordinary conditions is without symptoms. If, however, the pressure in the right atrium becomes higher than that in the left, grave complications may set in; under certain circumstances even large emboli can penetrate from the right half of the heart to the left. Paradoxical emboli are not an unusual finding at necropsy; 2 cases are reported. Twenty-one cases of embolus in foramen ovale are cited.

Malignant Granulocytopenia in Chronic Rheumatic Conditions.—Edström reports that, in 1,605 cases of rheumatic fever and chronic polyarthritis from 1936 to 1940 in which gold therapy and administration of aminopyrine and salicylates were applied, 15 deaths occurred, 12 from rheumatic infection and 3 from malignant granulocytopenia, while in 819 cases from 1928 to 1933 treated mainly with salicylates and to some extent with aminopyrine there were 33 deaths, 30 due to rheumatic infection and 3 to malignant granulocytopenia. The danger of malignant granulocytopenia apparently has not been increased by the introduction of the new therapy. The complications in this antirheumatic therapy, particularly malignant granulocytopenia, are believed to be more the results of an infectious-toxic factor in an organism with strong hyperergic reaction than the results of drug reaction.

Book Notices

The Autonomic Nervous System. By Albert Kuntz, Ph.D., M.D., Professor of Micro-Anatomy in St. Louis University School of Medicine, St. Louis. Third edition. Cloth. Price, $8.50. Pp. 687, with 91 illustrations. Philadelphia: Lea & Febiger, 1945.

Eleven years have intervened since the appearance of the second edition of Kuntz's book, years containing extensive investigative work into the form and function of the autonomic nervous system and into the role of this system in diseases and the surgical approach to therapy. These advances are reviewed and interpreted in this edition, and the content of the book has materially increased without a proportionate increase in pages. This has been accomplished by increasing the wordage per page. While the chapters on the anatomy of the autonomic nervous system have retained their arrangements, much new information has been added, for example the classification of the cells of the ganglions and the cytologic data on the processes of the ganglion cells. The role of the cerebral cortex in autonomic functions, which has been considerably elucidated since the appearance of the second edition, is concisely and completely covered. There is extensive augmentation of the chapters on autonomic physiology, which is particularly true in regard to the functions of diencephalic centers. The discussion of the role of chemical mediators is elaborated to take into account the active investigations in this field, and the phenomenon of denervation sensitivity is considered in detail. Discussion of the embryologic development of the autonomic nervous system is not materially altered from that of the second edition. While the chapters dealing with the innervation of the various viscera and structures have in large part retained their original outlines, new data have been judiciously added, for example the role of the vagus in cardiospasm, the stimulability of the jejunum and the important work on the stimulation of the respiratory center by carbon dioxide. The discussion of the histopathology of the autonomic ganglion cells has been somewhat enlarged, and neuronal changes such as hydropic alterations and neurofibrillar changes are given more importance.

In considering clinical relationships Kuntz finds no brief for the theory of vagotonia and sympathicotonia. Tests for autonomic function are extensively described under the headings (1) studies of singly innervated structures as the nictitating membrane, (2) tests based on denervation of either sympathetic or parasympathetic supply, (3) assay of the output of humoral mediation and (4) the observation of pharmacologic actions. The chapter on the autonomic nervous system in disease has been enlarged to include new data such as the more recent observations on carotid sinus sensitivity, emotional factors in the etiology of peptic ulcer and the etiology of intussusception. In reviewing autonomic neurosurgery Kuntz is now able to point out that no anatomic or physiologic rationale exists for periarterial sympathectomy. The results of sympathetic ganglionectomy and ramisection are reviewed, and the effects of autonomic surgery are reviewed in the various diseases in which such surgery is performed.

No review of this book is adequate without mentioning the extensive bibliography. This edition is welcome, for it brings down to date a scholarly, well documented treatise on an important part of the nervous system. It forms a valuable addition to the library of all concerned with neurology and it can be recommended without reservation.

Aviation Neuro-Psychiatry. By R. N. Ironside, M.B., F.R.C.P., Neurologist, West London Hospital, London, and I. R. C. Batchelor, M.B. Cloth. Price, $3. Pp. 167. Baltimore: William Wood & Company, 1945.

This book is a record of the authors' experiences overseas with Royal Air Forces combat units. It contains details concerning neurologic and psychiatric disabilities. The contents are a dull, nondynamic recapitulation of case histories of disabled fliers of the type found in any textbook. The drama, pathos and heroics of active combat are absent, as are the dynamic factors in the production of the war neuroses. Treatment consists for the most part in permanently grounding. American flight surgeons who were not specialists were far ahead of these neuropsychiatrists in their knowledge and therapeutic ability.

Industrial Oil and Fat Products. By Alton E. Bailey, Senior Chemical Technologist, Southern Regional Research Laboratory, U. S. Department of Agriculture, New Orleans, Louisiana. Cloth. Price, $10. Pp. 735, with 111 illustrations. New York: Interscience Publishers, Inc., 1945.

This book has been prepared by an author well versed in the technical aspects of fat and oil processing and their commercial applications. The benefit of advice from numerous experts in the various fields has been utilized, as is so desirable in literature presenting the complex problems of modern industry. The work may be considered as a textbook directed to industrial technologists. It covers briefly the chemical characteristics and nutritional properties of fats in its opening section as a background for the reader. Subsequently the material is developed in discussions on the sources of all known types of fat compounds, including production and consumption figures. The uses to which the various oils are placed in food production and other manufactured products, with the factors determining the selection of each for specific purposes, comprises a section of the book which is particularly well done. The final portion deals with physical and chemical processes to which fats and oils are commonly subjected in their preparation for various uses, from the original extraction by pressure or by solvent to treatment by chemicals for purification, fractionation or other special effect. The material is clearly presented in a well organized manner. It is documented freely by references to the original work from which the facts were obtained. The numerous tables and diagrams add much to the information supplied. The predominance of references are of very recent years. The book would appear to be an indispensable volume in any library of technical information on fats.

Sechenov. Akademiya Nauk Soyuza SSR, nauchno-populyarnaya seriya, biografii. [By] Kh. S. Koshtoyants. [Sechenov. Academy of sciences of U.S.S.R., Scientific Popular Series, Biography.] Cloth. Pp. 199, with portrait. Moscow & Leningrad: Izdatelstvo Akademii Nauk SSSR, 1945.

This interesting biography in Russian deals with the man who is referred to by the Russians as the father of Russian physiology. While the name of Pavlov is well known in this country, not only among scientific circles but even among laymen, that of Sechenov is probably known only to workers in his particular field. Born in 1829, Sechenov belongs to that small but elite group of scientists who are the true glory of Russia's science. This group includes such names as Mendeleev, A. P. Borodin, A. N. Beketov, A. O. Kovalevskiy, V. O. Kovalevskiy and Mechnikov. As did most ambitious Russian students of that age, on his graduation from the University of Moscow, Sechenov spent several years abroad. Here he had the privilege to work under such men as Du Bois Reymond, Carl Ludwig and Helmholz and to listen to the lectures of Johannes Mueller. While working in the laboratory of Claude Bernard, Sechenov made the important observation that there existed in the brain of a frog special mechanisms capable of inhibiting reflexes proceeding from the spinal cord. This was a discovery of a special physiologic function of the brain. His researches were published in 1863 under the title "Reflexes of the Brain." Somewhat later he published "Physiology of the Nervous System," in which he developed the hypothesis that all conscious and subconscious acts are in their essence reflexes. This was a startling idea for the time, namely that all psychic life with all its manifold manifestations is activated and maintained by stimuli which the organism receives from outside as well as with stimuli originating within the organism. Sechenov argued that loss of sensory stimuli or loss of sensations would render psychic life impossible. The principal cause of every act of a human being is to be found outside of him, in his environment. He arrived at a further conclusion that sensory stimuli need not necessarily be manifested by a motor act or any other external manifestation because the organism possesses nervous centers capable of inhibiting reflexes. This conclusion finds basis in his discovery that in the brain of a frog there exist special nervous centers which, when stimulated, will inhibit the development of reflex activities. This capacity for the elaboration of special reflex controls by retardation or inhibition of external manifestation of the reflex mechanism Sechenov considers the most important acquisition by man, constituting in fact the basis of that complicated process which is referred to as thought, intention, desire. Thought, according to Sechenov, is a reflex in its conception and its continuation but without the terminal act which is expressed in motion. The researches of Sechenov laid the foundation for the work of the Pavlov school. Pavlov himself stated that Sechenov's "Reflexes of the Brain" constituted the starting point of the researches of his own school. The essential similarity and kinship in the work of Sechenov and of Pavlov is that for both the formulation of the most complex acts of the so-called psychic activity depends on the environment. The study of conditional reflexes has demonstrated that the manifold manifestations of the higher nervous activity are the result of constant correlation between the organism and its environment. Both men stressed the objective physiologic method in the investigation of complicated psychic phenomena.

Analyze Yourself: Enabling Anyone to Become Deeply Psycho-Analyzed Without a Personal Analyst. By E. Pickworth Farrow, M.A., D.Sc. With a foreword by the late Professor Sigmund Freud, M.D., LL.D. Second edition. Cloth. Price, $2. Pp. 157. New York: International Universities Press, Inc., 1945.

Because of neurotic difficulties the author, a nonmedical professional man, underwent two trials of psychoanalysis with poor results. Each analyst seemed to offend the author, although he felt some improvement from the analytic experiences. He then continued his analytic procedure by having daily hourly appointments with himself, using written free associations. By so doing he dissolved certain repressions and uncovered crucial infantile memories with subsequent therapeutic benefits. The author therefore recommends the process of self analysis and describes its technics in detail. Certain personal discoveries made on himself are used to illustrate the process. Included is a dissertation on the disastrous effects of slaps and blows on infantile omnipotence when administered sufficiently hard to cause pain to the small child.

As Freud states in his foreword, the author uses a technic which was expounded in "The Interpretation of Dreams," although the results are in no way similar. This little book is fascinating and most convincing as to the capacity within some individuals for a type of self analysis. It also reveals a great deal about the author and indicates why he could profit by this procedure as contrasted with the majority of people.

The Adjustment of the Nervous Veteran in Industry. By Meyer Brown, M.D., Ph.D. Paper. Pp. 52, with 4 illustrations. Chicago: Zurich Insurance Companies, Industrial Welfare Department, [n. d.].

Among the many articles and books written for the psychiatric edification of the lay person this brochure is one of the best. Written by a competent psychiatrist who has had long practical experience in the Navy, the problems of the interpersonal adjustments of management and veteran labor are discussed in simple, easily understood language. Direct and specific sound advice is given. This is a book that should be widely recommended to industrialists and business men who wish to help service veterans who have become nervous.

Manual of Psychological Medicine for Practitioners and Students. By A. F. Tredgold, M.D., F.R.C.P., F.R.S.E. Second edition. Cloth. Price, $5. Pp. 308. Baltimore: William Wood & Company, 1945.

This work continues to be a dull and dry textbook of psychiatry which could hardly satisfy the needs of the practitioner or stimulate the interest of students. Two thirds of the book is devoted to organic disease of the brain, the psychoses, mental defects and legal problems which are not the areas of psychiatry that most concern the nonspecialist. The section on treatment is insufficient for any one to grasp the essentials. The dynamic states of the human mind cannot be grasped by perusal of this book.

Best Sports Stories of 1944. By I. T. Marsh and Edward Ehre. Price, $3. Pp. 335. New York: E. P. Dutton & Co., Inc., 1945.

Often the best action writing is that which comes hot off the typewriter in the very midst of some contest in the field of sport. Superiority in sport means also the development of colorful personalities who reflect themselves in interviews and in autobiographical statements. The very best of this writing is assembled in the collection of best stories made by Irving T. Marsh and Edward Ehre. About as fine a philosophical contribution as has appeared in many years and one especially reflecting humanity is the interview with Sam Langford, which heads the list.

Elements of Foods and Nutrition. By Mary T. Dowd and Alberta Dent. Second edition. Fabrikoid. Price, $2.25. Pp. 357, with 37 illustrations. New York: John Wiley & Sons, Inc.; London: Chapman & Hall, Limited, 1945.

This is intended as a primer which will arouse the young or uninitiated reader to the importance of good nutrition for good health. The earlier edition, published in 1937, has been completely revised to incorporate the basic nutritional advances made since then. The space devoted to actual discussion of the facts of nutrition is rather limited, whereas more attention is given to a description of the classes of foods and their contribution to a good diet and the proper preparation and use of these foods. Attention is directed to the needs of the family group as well as the individual. Recommended menu patterns are provided, and a feature not found in other books is a critical appraisal of the strength and weakness of racial dietary habits. A discussion of food fads and fallacies lends an interesting conclusion. The style of the book is highly simplified. In some cases rather loose statements are made, the accuracy of which might be questioned. The inclusion of questions and references after each chapter is a fine stimulus for the reader and of help to the teacher. The volume is well suited for use as a textbook in teaching nutrition through the high school level.

The Effect of Bombing on Health and Medical Care in Germany. Morale Division, United States Strategic Bombing Survey. Medical Branch Report. Fabrikoid. Pp. 388, with 196 illustrations. Washington, D. C.: War Department, 1945.

The effect of bombing from the air on the health and well-being of the residents of a modern industrial state like Germany inevitably must be profound. This book corroborates that belief. In it an effort has been made to document scientifically the number of deaths from bombing in Germany, the effect of bombing on communicable diseases, the destructive effect of bombing on medical schools, hospitals and sanitary installations, and the influence of bombing alone on the food supply and nutrition and supply of drugs and other medical equipment. Some of the information which is contained in the book has been the subject of newspaper articles, news from Germany in the foreign letters department of THE JOURNAL, correspondence and special articles. This book, nevertheless, presents an all-over picture of the effect of air raids which confirms the generally held belief that bombing alone profoundly influences the lives and health of all those in any large or concentrated population.

Oral Health. By H. Shirley Dwyer, D.D.S., Director, Division of Dental Services, New Hampshire State Department of Health, Concord. Cloth. Price, $1.25. Pp. 132, with 12 illustrations. Philadelphia & London: W. B. Saunders Company, 1945.

This book is planned particularly for health workers. It gives, in brief, information regarding the growth and development of the teeth and the causes of dental decay, the facts regarding prevention and prophylaxis in dentistry and much about the care of the more common diseases of the mouth. Other chapters concern the place of the public health nurse in a dental program and the meaning of health education. A final chapter deals with questions that a nurse is frequently asked and the answers to such questions.

A Companion to Manuals of Practical Anatomy. By E. B. Jamieson, M.D., Senior Demonstrator and Lecturer on Anatomy, University of Edinburgh, Edinburgh. Sixth edition. Fabrikoid. Price, $4.50. Pp. 736. New York, Toronto & London: Oxford University Press, 1945.

This book was originally written to provide an accurate account of gross anatomy in a small, compact and readily accessible form. That the book has attained this goal is attested by the appearance of the sixth edition. It has been written largely from the regional approach rather than the systematic. This is an advantage for those desiring to carry out various dissections. The only criticism against the book is that the Birmingham Revision of nomenclature has been adopted throughout the text. As to whether or not this is a disadvantage depends on the point of view of the individual anatomist or physician using the book. Many American anatomists strongly urge the retention of the BNA system of terminology until modifications are officially adopted by the various anatomic associations. They also believe that the use of any other system of terminology in the meantime would be detrimental to the best interests of science.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

VACCINES FOR DYSENTERY

To the Editor:—What is the present status of dysentery vaccine as a prophylactic measure? I understand that it is recommended in institutional or other outbreaks of dysentery but that the period of immunization is relatively short. Would there be any practical basis for routinely giving each new admission to a state hospital a prophylactic course of dysentery vaccine in the absence of an epidemic or of any known cases of the disease?

M.D., Pennsylvania.

ANSWER.—Extensive studies of dysentery vaccines have been conducted in the past two years under the sponsorship of the Committee on Medical Research of the Office of Scientific Research and Development. During these investigations the vaccines were used extensively in institutions in which dysentery was endemic or epidemic. The results were disappointing. The total numbers of individuals, cases and carriers, who acquired infection in the vaccinated and control groups were essentially the same. In one institution 265 patients were vaccinated and 264 observed as controls. Among these there were 45 and 48 clinical cases respectively and 127 and 128 identified passive carriers respectively. The vaccines which appeared most promising were used in these tests. It is concluded, therefore, that dysentery (Shigella) vaccines as prepared and given at present have no practical value in the control of these infections.

SYMPTOMS IN POISONING WITH METHYL ALCOHOL AND ETHYLENE GLYCOL

To the Editor:—What are the physical observations in methyl alcohol poisoning? Would the ingestion of either methyl alcohol or Prestone (ethylene glycol) by a man aged 40 produce methemoglobin of 30 volumes per cent, coma of about twelve hours' duration, Kussmaul breathing, blood pressure of 110/40-0 with complete anuria of about the same duration, normal spinal fluid, with bilateral internal strabismus, normal fundi ophthalmoscopically, a terminal white blood cell count of 60,000, all superficial reflexes absent and negative Babinski and recti? Four hours following administration of 2,000 cc. of 5 per cent glucose in an isotonic solution, knee and Achilles reflexes reappeared, and blood pressure rose to 180/90. Examination four hours later revealed that these reflexes were again absent and the blood pressure was 110/40-0. Death followed six hours later. About 1 ounce of urine was obtained at the first examination sixteen hours before death; this showed normal sugar and albumin and many pus cells. Would any treatment other than intravenous fluids, oxygen with 5 per cent carbon dioxide and supportive treatment have been indicated?

Clifford W. Atherton, M.D., Stambaugh, Mich.

ANSWER.—The symptoms and physical signs of methyl alcohol poisoning as it occurred among a large number of Navy personnel have recently been described by Jacobson, Russell, Grimm and Fox (*U. S. Nav. M. Bull.* **44:**1099 [May] 1945). The symptoms include mild alcoholic intoxication, headache, supraorbital or retro-orbital pain, blurred vision, loss of color vision, first for green, then for red and yellow and finally for blue, central scotoma, abdominal cramps, nausea and vomiting, drowsiness, loss of memory, confusion and coma. An odor of methyl alcohol may be detected on the breath. The physical signs are a flushed face or cyanosis of the chest, face and fingertips, slight fever with proportionately rapid pulse and dilated pupils that react sluggishly or not at all to light. When coma supervenes, the dilated pupils are usually fixed; the skin is cold, moist and clammy; the respiration is labored and deep (5 per minute) and the pulse rapid and thready. In 1 case, however, the pulse was full, bounding and slow (40 per minute) and continued so for ten minutes after respiration had ceased. In many but not all of the fatal cases death was preceded by a series of convulsive seizures described as being of the decerebrate type. Aside from these and the fixed pupils no neurologic abnormalities were described. Examination of the fundus showed mild hyperemia of the disk and retina, haziness of the disk margins and slight engorgement of the blood vessels, most noticeable in the macular area. The urine was acid (p_H 5.5, 6.0) and usually contained traces of albumin and numerous hyaline and granular casts. Methyl alcohol was readily found in the blood.

Cases of poisoning by Prestone (ethylene glycol) have been few in number and inadequately described (THE JOURNAL, June 14, 1930, p. 1940).

In the case described in the query, the meaning of the statement "methemoglobin of 30 volumes per cent" is not clear. If it is meant that 30 per cent of the blood pigment had been converted to methemoglobin, the observation would suggest an intoxication. Methemoglobin formation is not, however, a feature of intoxication by methyl alcohol, nor has it been found in animal experimentation with the glycols. An overdose of such a drug as acetanilid or sulfonal might conceivably give rise to this clinical picture. It could also occur as the result of poisoning by nitrobenzene, aniline or some related compound, although in the case of nitrobenzene poisoning the urine is usually dark. The other features of the case, with the exception of the leukocytosis, are compatible with fatal intoxication induced by alcohols and a number of other organic solvents. The origin of the leukocytosis is not apparent and may be irrelevant. As to therapy, if a state of acidosis was present it could have been corrected by the intravenous administration of a solution of sodium bicarbonate. Its presence could have been determined by measuring the alkali reserve in the blood or, if facilities for this were lacking, by measuring the p_H of the urine. This procedure has been found effective in such cases.

AMPHETAMINE AND THYROID FOR OBESITY DURING PREGNANCY

To the Editor:—I have been treating a young woman successfully for obesity with tablets containing thyroid and amphetamine. She has now become pregnant. Are there any contraindications to the continuance of this medication because of her pregnancy? Are there any reasons to expect any harm to the fetus?

M.D., New York.

ANSWER.—In general it is unwise to give amphetamine (benzedrine sulfate) during pregnancy. It would not be very good treatment even if the woman was not pregnant. It was originally recommended in weight reduction because it was supposed to reduce the appetite for food. It is of doubtful value for this purpose. Moderate doses of thyroid would probably not harm either the mother or the fetus during pregnancy, but the condition of the mother should be checked carefully while she is receiving it. A rigid weight reducing diet should not be continued after a patient becomes pregnant. Both mother and fetus require a well balanced diet that is adequate in all respects. In obese women some restriction of the total caloric intake may be desirable during pregnancy in order to prevent gain in weight, but it is doubtful that weight reduction should be carried out during pregnancy.

SULFOBROMOPHTHALEIN TEST

To the Editor:—I would appreciate knowing what amount of dye was used by Colonel Barker and his associates in their sulfobromophthalein test (The Journal, Nov. 3, 1945, p. 653). Some use 2 mg. per kilogram and others 5 mg. per kilogram.

Albert F. Brown, M.D., Glendale 6, Calif.

ANSWER.—Sulfobromophthalein 5 mg. per kilogram of body weight was used in all cases studied in the Mediterranean theater (THE JOURNAL, Aug. 4, 1945, p. 997, and Nov. 3, 1945, p. 653). Bloods were drawn at one-half hour and one hour in approximately one half the cases, while the remainder had samples taken at forty-five minutes and one hour. Control studies in soldiers in 1942-1945 indicated that the technic of using 5 mg. per kilogram with samples drawn at forty-five minutes were generally most satisfactory. If 2 or more per cent of dye is retained at the end of forty-five minutes, a second sample was drawn at the hour. Any retention at the hour or failure to reduce further the forty-five minute level was generally abnormal except in the convalescent period from certain acute infectious diseases.

INJECTION OF PROCAINE FOR FOOTBALL INJURIES

To the Editor:—Is it considered good practice, in the treatment of football injuries in which fracture is not present, to inject a knee or ankle with procaine? If so, what is the technic? Is it advisable to let a player continue playing following such an injection?

D. L. Hollis, M.D., Biloxi, Miss.

ANSWER.—It is good practice to inject a sprained ankle with procaine when a fracture has been proved absent by x-ray. This does not hold for knee injuries. This injection treatment could be used in football injuries but immediate resumption of play should not be allowed, nor can a cure be expected in every case. One method is to inject, under sterile precautions, 2 to 5 cc. of a 2 per cent solution of procaine into the tender spot on the ligament. Care should be taken not to inject into a blood vessel. It is well to aspirate first and, if no blood is withdrawn, to inject the procaine without withdrawing the needle. Immediate motion should be started. If the next day no pain recurs, it would be allowable to indulge in football. Even so, the ankle should be well strapped with adhesive tape to prevent recurrence of the sprain.

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ACTION OF PENICILLIN, ESPECIALLY ON TREPONEMA PALLIDUM

CHESTER N. FRAZIER, M.D.
and
EDWARD H. FRIEDEN, Ph.D.
Galveston, Texas

The precise way in which penicillin acts to destroy microbial life is unknown. Penicillin differs, however, from the common antiseptics, such as the phenols, in that it is not a general protoplasmic poison. In this respect it resembles other antibiotic substances as well as the sulfonamides, which act primarily by inhibiting the growth of the cell. For this reason it is generally assumed that penicillin interferes with the normal completion of some metabolic transformation, thus inhibiting the development of the cell and leading eventually to its death.

Certain antibacterial substances are inhibited by specific chemical agents. The identification of the inhibitor has contributed in some instances to a clearer understanding of the essential mode of action of the antibacterial substance, as for example the inhibition of the sulfonamides by para-aminobenzoic acid. In this instance the phenomenon has been explained by the fact that para-aminobenzoic acid is a factor in bacterial nutrition closely related in chemical structure to the sulfonamides in that the sulfonamido group of the latter is replaced by a carboxyl group in the para-aminobenzoic acid molecule. It is thought, therefore, that at some vital stage of bacterial metabolism there is competition between the sulfonamide and para-aminobenzoic acid for an enzyme, with the result that the sulfonamide, not possessing the specific action of the metabolite, interrupts the normal metabolic process with which the substrate is concerned. This is an engaging hypothesis, although there may yet be no direct proof to support it.[1]

A similar example of competitive inhibition is had in the action of pantoyltaurine on the growth of hemolytic streptococci and Corynebacterium diphtheriae.[2] Inhibition of growth in this instance is the result apparently of an interference by pantoyltaurine with the utilization of pantothenic acid by the bacterial organisms.

ANTIBACTERIAL ACTION OF PENICILLIN

Potency.—Penicillin is the most potent, and yet nontoxic, antibacterial substance yet applied to the treatment of clinical disease. The purest penicillin thus far available inhibits the growth of the most sensitive organisms, such as the staphylococcus and gonococcus, in dilutions of about 1 : 50,000,000. Preparations now in clinical use will inhibit at dilutions of from 1 : 5,000,000 to 1 : 15,000,000 under optimal conditions.[3] As little as 0.04 unit per cubic centimeter of penicillin (corresponding to about 0.02 microgram of the pure substance) is sufficient to kill 200 million organisms. This activity is of the same order as that of the highly active enzymes and suggests that penicillin is a part of an enzyme or actuates an enzymatic system.[4]

The preparations of penicillin in general use are mixtures of the sodium salt and different amounts of other substances of an unknown nature. Apparently, it is some fraction of partially purified penicillin which is effective in the treatment of syphilis. This possibility is suggested by the observations of Dunham and Rake,[5] who found that crystalline penicillin G did not immobilize Treponema pallidum in the same concentrations as did the partially purified penicillin. A substance in the latter which can be concentrated by adsorption on alumina possessed the greatest antispirochetal action.

Although crystalline penicillin G did not immobilize spirochetes in vitro, it did possess in large doses some degree of antisyphilitic action, as shown by its ability to modify the reaction of the rabbit to infection with Treponema pallidum.

The effect of purification on the antispirochetal potency of penicillin is evident in the results of immobilization tests and in the protection afforded laboratory animals against syphilitic infection. The alumina adsorbate immobilized all spirochetes in concentrations equivalent to 2,200 units per cubic centimeter, but 8,800 units per cubic centimeter of a recently prepared commercial penicillin failed to immobilize all organisms. Crystalline penicillin G in a dilution of 8,800 units per cubic centimeter had no effect on motility. Partially purified penicillin (330 units per milligram) protected 4 out of 5 rabbits from infection as determined by lymph node transfers when 66,000 units per kilogram of body weight was injected intramuscularly five hours after a suspension of Treponema pallidum was rubbed into an incision of the skin. The same dose of crystalline penicillin G failed to protect animals under similar conditions.

Further evidence that the antispirochetal potency of penicillin resides in one or more of the impurities in the preparations was had in the failure of weak solutions of penicillinase to reduce the immobilizing activity of the substance under conditions which would inactivate a large part of the penicillin present.

From the Department of Dermatology and Syphilology, University of Texas School of Medicine.

Paper in a symposium on "The Penicillin Therapy of Syphilis" published under the auspices of the Section on Dermatology and Syphilology.

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Selective Action of Penicillin.—In general, the gram-positive organisms are sensitive to penicillin, as also are the gram-negative cocci, but the gram-negative bacilli are insensitive. Some species, however, show strain variations. Penicillin has in vitro a high degree of specificity for the pyogenic cocci, pneumococci, anaerobic clostridia and the pathogenic gram-negative cocci Neisseria gonorrheae and Neisseria meningitidis. There is, however, a lack of sensitivity on the part of the colon-typhoid group and the hemophilic and chromogenic bacilli. The tubercle bacillus and Trypanosoma equiperdum are resistant,[6] but both Treponema pallidum and Borrelia novyi are inhibited by its action, as apparently are also Leptospira icterohemorrhagiae and Spirillum minus.[7] Recent clinical observations indicate that the spirochete of yaws is also sensitive to penicillin,[8] and favorable results have followed its use in fusospirochetosis.[9]

Treponema Pallidum.—In December 1943 Mahoney, Arnold and Harris [10] reported the beneficial effect of penicillin on 4 patients with seropositive primary syphilis. A short time thereafter Dunham, Hamre, McKee and Rake [11] found that relatively high concentrations of penicillin, from 800 to 1,600 units per 0.8 cc., affected in vitro the motility of Treponema pallidum. The organisms were obtained from the testes of experimentally infected rabbits in the stage of acute orchitis. It was shown also by Eagle and Musselman [12] that penicillin exerted a spirocheticidal effect on artificially cultivated strains of spirochetes.

The immediate effects of penicillin on early syphilitic infections in man have been satisfactorily demonstrated by the disappearance of surface organisms from open lesions, the healing of lesions and a trend toward the reversal of serologic reactions.[13]

Attempts have been made to establish the minimal healing and sterilizing doses of penicillin in experimental syphilis of the rabbit, but the results thus far have lacked definitive significance.[14] In general, single large doses have not proved effective as far as permanent suppression of the infection is concerned. It is becoming increasingly clear that the proper spacing of adequate doses of penicillin over a period of time, yet undetermined from the human subject, will be required for the permanent control of the infection, if that can be achieved.

Single intravenous doses of from 33,000 to 47,000 units per kilogram were required to produce disappearance of spirochetes from scrotal chancres in the rabbit. The same effect was obtained with about 16,000 units per kilogram when the drug was administered in repeated doses of approximately 4,000 units per kilogram over a period of seventy-two hours. The latter dose was sufficient to produce healing of the testicular lesions in from ten to fifteen days. Lymph nodes of 4 rabbits treated with 132,000 to 282,000 units per kilogram were proved subsequently to be infectious. Selbie and Simon [15] found that 45,000 units per kilogram, when given to rabbits in three equally divided doses at intervals of three hours, caused the disappearance of organisms within twenty-four hours as determined by the direct examination of testicular lesions. Organisms, however, reappeared in the majority of the lesions in from thirty to forty-five days after treatment. In these experiments it is apparent that the factor of time as related to dosage was at fault.

MECHANISM OF ACTION

There is a body of facts relating to the biologic conditions which limit, or proceed from, the effects of penicillin that help to define the mechanism of its action. These have been adduced chiefly from in vitro experiments with the more sensitive micro-organisms such as the pyogenic cocci, the pneumococcus and the gonococcus. Only a few similar observations have been made on the behavior of Treponema pallidum. The lack of suitable biologic materials and technics for the study in vitro of this most fastidious organism has imposed limitations on laboratory investigation.

Antibacterial Action.—It is becoming more apparent that penicillin acts chiefly as a bactericidal agent. According to a recent statement of Chain and Duthie [4] there is no conclusive evidence that it can exert a purely bacteriostatic effect under any condition.

The bactericidal action of penicillin, originally suspected by Fleming,[16] was doubted at first by Abraham and Chain,[17] who were unable to detect any disturbance in oxygen uptake of resting staphylococci even in high concentrations of the antibiotic substance. Hobby and her associates,[18] however, observed a powerful killing effect of penicillin on pneumococci, hemolytic streptococci and staphylococci under conditions permitting rapid baterial growth. The number of surviving organisms decreased geometrically as the time of action increased by arithmetical units until at least 99 per cent of the organisms were killed. Bactericidal action was enhanced by substances favorable to bacterial growth and diminished by those interfering with growth.[19] A similar mode of action on the meningococcus was observed by

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Miller and Foster;[20] and Rammelkamp and Keefer[21] found evidence of bactericidal action on the streptococcus and staphylococcus in human blood.

The rate of killing is characteristic of the organism and varies inversely with the original number of organisms in the culture and directly with the concentration of penicillin up to certain limits, beyond which increases in concentration apparently no longer enhance its effectiveness. No appreciable amount of penicillin is absorbed or destroyed as a result of antibacterial action. Perhaps most significant of all is the finding that the greatest destruction of organisms occurs during the phase of rapid multiplication.

Recently Chain and Duthie[4] reported that during the resting phase of the cultural cycle of the staphylococcus large concentrations of penicillin had no effect on the rate of oxygen uptake. However, during the early lag phase and the logarithmic phase of growth, penicillin in very small concentrations (0.04-0.1 unit per cubic centimeter) exerted a strong inhibitory effect on oxygen uptake and eventually stopped the process altogether. This would confirm the earlier observations and indicates that penicillin kills bacteria in the phase of multiplication but does not kill them in the resting stage. It would appear, therefore, that penicillin interferes with a metabolic function involved in the early stages of bacterial development.

In this respect there is evidence that the sulfonamides act in a manner similar to penicillin, with the exception that penicillin is capable of destroying bacteria in the early lag phase of growth before actual cell division begins, whereas the sulfonamides exert a similar action only after a number of cell divisions have occurred in its presence.[22] As pointed out by Chain and Duthie, it is probable that conditions occur in the body under which micro-organisms may be in the resting stage and thus be insusceptible to the action of penicillin.

The fact that penicillin as well as some of the other antibiotics (gliotoxin, aspergillic acid, bromoaspergillic acid and fumigacin)[11] are the only chemotherapeutic agents besides the arsenical, bismuth and mercurial compounds which are effective against Treponema pallidum suggests that a careful consideration of the mechanism of action of the latter may be helpful in interpreting the available data relating to the mechanism of the action of penicillin.

THE MECHANISM OF SPIROCHETICIDAL ACTION OF THE ARSENICAL COMPOUNDS

It was once generally accepted that the arsphenamines had no direct spirocheticidal action and that their effectiveness depended on the conversion of the arsenical compound in the body into some other substance or on the stimulation of some obscure mechanism of defense in the body. Doubting these assumptions, Eagle[23] in a series of experiments found no evidence to support the view that the arsphenamines are themselves inactive or are converted by the tissues to a spirocheticidal agent. In fact, he observed that tissues such as testicular extractives inhibited rather than accentuated the antispirochetal action of the arsenical. He was able to show further that the trivalent arsenicals and a phenylarsenoxide[23] had a definite spirocheticidal effect in vitro in dilutions as high as those attained in vivo after therapeutic administration of these drugs.

Several years ago, in a study of the trypanocidal action of arsenical drugs, Voegtlin, Dyer and Leonard[24] suggested that arsenic may combine with the sulfhydryl groups in the organism in the process of its destruction. They observed that cysteine significantly retarded or abolished in vivo the trypanocidal action of the arsenical, presumably because the excess cysteine competed for the arsenical with a sulfhydryl component of the trypanosome.

Later, in testing this hypothesis, Eagle[25] found that various sulfhydryl compounds (cysteine, glutathione and thioglycolic acid) almost completely abolished the antispirochetal action of arsenical, mercurial and bismuth compounds in vitro in what was probably a freely reversible reaction. The fact that all the antispirochetal agents tested were rapidly and almost completely inactivated by the addition of sulfhydryl compounds suggested to him that they may owe their therapeutic activity to similar combinations with sulfhydryl groups in the spirochetes.

In this connection it should be emphasized, as pointed out by Eagle, that the action of sulfhydryl compounds in inhibiting the spirocheticidal and trypanocidal action of the arsenoxides is insufficient to prove that the therapeutic action of these compounds is effected by combination with labile sulfhydryl groups within the sensitive organism. It is possible that the action of the inhibitor is merely to block the arsenic-containing molecule so that the latter is unable to affect a reaction completely unrelated to — SH metabolism. However, the fact that such inhibitors are equally effective against the arsphenamines is powerful support for this attractive hypothesis. There is no a priori reason to suppose that the reaction between sulfhydryl compounds and arsphenamine or related compounds proceeds to any considerable extent, at least in vitro. There is ample evidence that the arsphenamines do not require conversion into arsenoxides in order to exert their spirocheticidal and trypanocidal effects.[26] The inhibitory effect of various sulfhydryl compounds in this case, therefore, suggests an intimate relationship between such compounds and the physiologic process, or processes, affected by the drug.

MECHANISM OF ANTISPIROCHETAL ACTION OF PENICILLIN

Action in Vitro.—Pathogenic strains of Treponema pallidum have not been cultivated on artificial mediums. However, strains which purport to be Treponema pallidum have been cultivated. These are not pathogenic for animals and differ morphologically from the true organism. The so-called Reiter's strain grows luxuriantly in Brewer's thioglycolate medium, enriched with one-tenth volume of heated rabbit's serum.

Using the Reiter strain of spirochete, Eagle and Musselman[12] found that penicillin in threshold concentrations of 0.01 unit per cubic centimeter was actively spirocheticidal in vitro and that the rate and degree of action increased with the concentration of penicillin up to a level of approximately 0.1 to 0.25 unit per cubic centimeter. At this level fully 99 per cent of the organisms were made nonviable within twelve hours, as indicated by their failure to grow in subcultures. This effect was not improved by higher concentrations of the antibiotic agent.

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Organisms remained actively motile for a period of from eight to twenty-four hours after they had become nonviable from contact with the penicillin. As doses of penicillin approximately 10,000 times those required to inhibit the growth of the spirochetes in subcultures did not accelerate the immobilization of the organisms, it was the impression that the metabolic system affected was not immediately essential to the life of the spirochete.

It was also demonstrated that the rate at which organisms were killed increased with temperature in the range of 8 to 40 C., the increase being independent of the concentration of penicillin employed (0.25 to 250 units per cubic centimeter).

Action in Vivo.—Suspensions of pathogenic Treponema pallidum obtained from testicular lesions of the rabbit were not immobilized in from two to six hours by concentrations of penicillin up to 500 units per cubic centimeter. Since the motility of the highly susceptible cultured spirochetes was not affected in that period of time and in those concentrations, it was thought that the observation did not exclude a direct spirocheticidal effect. In the case of the cultured organisms, penicillin was actively spirocheticidal in minute doses yet did not affect the motility of the organism. In other words, it seems probable that penicillin may directly inhibit the function of multiplication of the spirochete without initially destroying its power of motion.

When partially purified penicillin in concentrations insufficient to cause complete immobilization of pathogenic strains of Treponema pallidum were used, Dunham and Rake [5] saw that the last form of motion to be lost was the bending of the body of the spirochete near the midpoint. This suggested to them that axial rotation of the organism is caused by the motion of its flagella. In such case the flagella would appear to be more sensitive to penicillin than is the body of the organism.

These investigators also found that penicillin probably destroys the reproductive capacity of the spirochete without inhibiting its function of locomotion. Spirochetes exposed to 1,100 units per cubic centimeter of partially purified penicillin did not produce demonstrable signs of disease in rabbits over a period of two months, although many spirochetes were still motile at the time of inoculation. Mixtures containing 550 units per cubic centimeter and those containing 1,100 units per cubic centimeter showed little difference in the percentage of motile organisms, but the difference in the infectivity of the two mixtures was extreme.

It will be recalled that Eagle and Musselman observed a similar differentiation of action on cultivated strains of spirochetes. The results of the in vivo experiments of Dunham and Rake were inconclusive, however, since the possibility of latent infection in the rabbits was not excluded.

As the rate at which spirochetes were killed by penicillin was independent within wide limits of its concentration, it was suggested that, if an effective level of penicillin could be maintained in the tissues, further increase in the size of individual doses would add little to the efficacy of treatment.

This suggestion accords with the facts as they are known concerning other micro-organisms sensitive to the action of penicillin. Increasing the minimal concentration of penicillin which will completely inhibit an inoculum of certain strains of bacteria in a stated period of time does not alter the rate or the extent of bacterial inhibition per unit of time.

As pointed out by McDermott, Benoit and Dubois,[27] once the minimal effective concentration of penicillin is attained, remission of syphilitic disease will occur, and much larger concentrations of the antibiotic agent per unit of time serve no useful purpose; only by the maintenance of the minimal effective level for a period much longer than that which establishes the primary remission can a relapse of the disease be prevented. There is also reason to believe that the maintenance of effective levels of penicillin in the tissues for a prolonged period of time need not be continuous. The absolute values of the minimal effective level of penicillin and the time over which it must be maintained obviously must vary with the micro-organism and probably with the nature of the tissue reaction which it produces. The factor of tissue reaction would seem to be of importance in a disease such as syphilis, in which the reaction in the early acute phase differs measurably from that of the late chronic phase, especially as it involves the central nervous and cardiovascular systems.

The minimal concentration of penicillin which will completely inhibit Treponema pallidum in vitro is not known. Certain streptococci and other organisms are inhibited by concentrations ranging from 0.01 to 0.02 unit per cubic centimeter. The Reiter's strain of spirochete can be inhibited completely in vitro for a period of seven days by concentrations of from 0.02 to 0.05 unit per cubic centimeter.[12] Concentrations of penicillin of 0.01 to 0.04 unit per cubic centimeter in the blood serum are associated with rapid disappearance of spirochetes from the surface lesions and healing of the lesions. On the basis of such information it has been assumed by McDermott that a concentration of penicillin in the serum of 0.078 unit per cubic centimeter is probably well above the minimal effective level for the destruction of the spirochete. (This is the lowest concentration of penicillin which can be measured in serum by the Rammelkamp method.) It would appear that blood levels of this height are maintained for a period of ninety minutes following a single intramuscular injection of 20,000 units of penicillin and for one hundred and twenty minutes following an injection of 40,000 units.[27]

It should be remembered, however, that concentrations of penicillin in the tissues may not be at the same level as in the serum, particularly in relatively avascular regions, so that a much higher serum level might be necessary to maintain an effective spirocheticidal concentration in such tissues.

The length of time during which effective levels must be maintained, and whether such levels need be continuous or might better be intermittent, are problems which have not yet been solved either in the laboratory or in the clinic.

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EFFECT OF PENICILLIN ON MORPHOLOGY OF MICRO-ORGANISMS

It has long been known that the form of a bacterial cell is affected by the presence of other micro-organisms or by substances they produce. Borodulina[28] observed that antibiotic substances produced by actinomycetes influenced the growth of Bacillus mycoides in such a way as to delay cell division. As a result, the organisms became elongated and grew to an enormous size, often exhibiting a bizarre pleomorphism.

Gardner[29] saw that cultures of Clostridium welchi, when growing in the presence of penicillin at concentrations less than those required for complete inhibition of growth, developed an extreme elongation of the majority of cells. These took the form of segmented filaments often ten or more times as long as the normal cell. By further investigation this phenomenon was found to be characteristic of all bacillary forms which displayed any inhibition of growth in the presence of penicillin. On exposure to incompletely inhibitory concentrations, pleomorphism is also developed by other organisms, among them staphylococci, streptococci and the cholera vibrio. It was thought that the changes in form are due chiefly to the continuation of growth without the usual division and separation of cells.

Similar morphologic changes in the gonococcus in smears from patients under treatment with penicillin were described by Miller and his co-workers.[30] Alterations in form were seen at the time the number of organisms was diminishing most rapidly. Under similar circumstances, Cohn and Kornblith[31] found that "swollen, puffed-up, dumbbell-shaped or irregularly outlined ball-like forms" of gonococci appeared from one to five hours after the beginning of treatment.

Treponema pallidum.—Changes in the length of spirochetes obtained from patients under treatment with penicillin were first observed in this laboratory by H. G. Sleeper. During the examination by dark field illumination of material collected from the surface of chancres or from eroded papules of secondary syphilis it was found that the relative distribution of long and short forms of the spirochete varied after the beginning of treatment in such a way as to suggest that the changes observed were related to the effect of penicillin.

Within ninety minutes after the first injection of 20,000 units of penicillin there was a relative increase in the number of long forms of the spirochete. The increase was progressive within limits until organisms could no longer be found in the dark field preparations. In 1 instance, at two and a half hours after the first injection of 20,000 units of penicillin the ratio of long to short forms increased from 1 to 22 to 1 to 5, and in a second case after six hours of treatment, when the patient had received a total of 40,000 units, the ratio of long to short forms was 1 to 3 where originally it had been 1 to 10. No long forms were found before treatment in a third case, but three hours after 20,000 units of penicillin was administered there were two long forms to each short form. Altogether 5 patients have been studied, and in each the behavior of the spirochetes was similar.

The short forms were from 7 to 12 microns in length, while the long forms were from 14 to 22 microns. The long forms were in general less motile than the short forms and were occasionally angulated at the middle. At the point of angulation some organisms showed a small zone of thickening. In other instances it looked as if two short forms were hooked together.

As this phenomenon has attracted the attention of several observers in the laboratory, it apparently occurs with a certain degree of regularity and is probably significant.

In the light of the changes in form of bacillary organisms following contact with penicillin, one wonders whether the elongation of the spirochetes found in these cases may not be an indication of excessive growth and delayed cellular division. Although the mode of division of Treponema pallidum remains conjectural, one might assume from the increase in the number of long forms and the alteration in contour at the point of angulation which was observed in some of the long forms that the organism may possibly divide by binary fission.

INHIBITION OF PENICILLIN ACTION

The growth inhibiting properties of penicillin may be inactivated, or even destroyed, by substances of microbial origin. A fundamental understanding of such inhibitors and the mode of their action might shed some light on the mechanism whereby penicillin affects bacterial growth. The mode of action of the sulfonamides was indicated by the discovery that a substance contained in yeast, later identified as para-aminobenzoic acid, inhibits the action of sulfonamides on susceptible organisms.[32]

The existence of an inhibitory substance specific against penicillin was first demonstrated by Abraham and Chain,[33] who found that Escherichia coli, a gram-negative organism insensitive to penicillin, contained an enzyme-like substance which destroyed the growth inhibiting property of penicillin. This substance they called penicillinase. It was found, however, that penicillinase is not the sole factor determining the sensitivity of an organism to penicillin; in fact, penicillinase may be found in organisms sensitive to penicillin. Furthermore, an increase in tolerance to penicillin need not be accompanied by the production of penicillinase.[34] It is of interest, nevertheless, that most organisms commonly recognized as pathogens do not produce penicillinase, regardless of their sensitivity or insensitivity to penicillin.

Kirby[35] has reported the finding of a penicillin-destroying staphylococcus as a contaminant in a culture of Aspergillus flavus, and also a highly potent inactivator from a strain of penicillin resistant staphylococcus obtained from clinical sources, presumably the product of bacterial metabolism.

As the development of sulfonamide resistance by some strains of staphylococcus is related quantitatively to the production of para-aminobenzoic acid, these observations may have some significance as related to the possible mode of action of penicillin. In general, however, there is as yet little evidence to suggest the pos-

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sibility of competitive enzyme systems as a basis for the action of penicillin.

A number of workers have succeeded in developing penicillin resistant strains of bacteria by cultivation in increasing concentrations of penicillin, but the nature of this acquired resistance is unknown.[34] Strains of coagulase positive staphylococci are occasionally identified which possess a natural resistance to penicillin, and others may acquire a temporary resistance.[36] Certain lots of clarase, a diastatic enzyme preparation, may inactivate penicillin. The potency of this substance was attributed to the presence of bacterial products, especially of Bacillus subtilis.[37]

Penicillin can also be inactivated by various sulfhydryl compounds, among them thioglycolic acid and cysteine. This has brought Cavillito and Bailey [38] to believe that the main mode of action of many antibiotic substances rests in their ability to interfere with the normal function of sulfhydryl groups in bacterial metabolism. When penicillin was brought in contact with an excess of neutralized cysteine hydrochloride, it rapidly lost its antibiotic activity.

Inactivation by cysteine may involve any one or more of the reactive groups in the cysteine molecule, namely the amino, the carboxyl and the sulfhydryl groups. As several of the amino acids (aminoacetic acid, cystine, methionine and serine) did not modify the activity of penicillin, and as cysteine was a more potent inactivator than thioglycolic acid, Chow and McKee [39] came to the conclusion that the inactivation by cysteine may involve both the sulfhydryl and the amino groups of the cysteine molecule.

Inhibition of antibiotics other than penicillin by certain sulfhydryl compounds has been repeatedly demonstrated. Of particular interest in this connection is the work of Geiger and Conn.[40] These workers studied the effect of cysteine and thioglycolate on clavacin and penicillic acid, as well as on some other alpha, beta unsaturated ketones which were shown to have antibacterial activity. Both of these reducing agents diminished the antibacterial activity of those ketones with which a chemical reaction involving the sulfhydryl group occurs (as shown by the disappearance of the nitroprussic acid test for — SH). Similar results were obtained by Colwell and McCall,[41] who showed that the antibacterial action of menadione (2-methyl-1, 4-naphthoquinone), as well as that of its 3-chloro and 6-methyl derivatives, could be suppressed by thioglycolate and cysteine. These three substances were shown to react with — SH compounds. In contrast to these results, however, the antibacterial activity of 2-methyl-3-methoxy-1, 4-naphthoquinone remained unaffected by cysteine, and no evidence for a reaction between these two substances in vitro could be obtained.

The facts just summarized can be explained by assuming that the inhibition of antibiotics by sulfhydryl compounds occurs as the result of a chemical reaction involving the two substances and leading to the formation of an inactive reaction product. They do not require the hypothesis that the action of the inhibitor is the restoration of normal equilibrium conditions to an enzyme system involving — SH compounds, which was previously disturbed by the antibiotic. Indeed, the results obtained by Colwell and McCall with 2-methyl-3-methoxy-1, 4-naphthoquinone, as well as some of the data of Geiger and Conn, are in direct contradiction to this view.

The antibacterial action of the quinones is of interest in this connection because of the presence of the quinone structure in some antibiotic agents. The synthetic menadione was shown to be bacteriostatic and bactericidal for both gram-positive cocci and gram-negative bacilli.

The similarity of the effects of sulfhydryl compounds on penicillin and the arsenicals may be indicative of a possible similarity in the modes of action of the two types of antispirochetal agents. It is important to note, however, that significant differences exist with respect to such effects. While the inactivation of penicillin by cysteine proceeds slowly, the addition of this substance to suspensions of Treponema pallidum exposed to the action, for example, of arsphenamine results in the immediate inhibition of the antispirochetal action. The fact that the arsenicals can be regarded as general protoplasmic poisons, while penicillin is not, may also be an indication of the essentially dissimilar nature of their respective modes of action.

ADAPTATION OF MICRO-ORGANISMS TO PENICILLIN

The phenomenon of induced bacterial resistance to the sulfonamides has been adequately demonstrated in connection with gonococcic infections in man.[21] Adaptation of the gonococcus to the sulfonamides, however, does not affect its sensitivity to penicillin, so that sulfonamide resistant infections are readily responsive to treatment with penicillin.

It is possible by suitable laboratory procedures to increase the tolerance of bacteria to penicillin. Abraham and his associates [17] increased the resistance of a strain of Staphylococcus aureus as much as a thousand fold by subculturing at increasing concentrations of penicillin. McKee and Houck [42] increased the resistance of a staphylococcus to a point six thousand times as high as that of the parent strain by sixty serial passages through concentrations of penicillin barely inhibitory to growth. Neither Streptococcus pyogenes nor the pneumococcus was so readily altered in tolerance as was the staphylococcus. Increase in resistance was accompanied by a corresponding loss of virulence of the organisms tested. This is in contrast to the sulfonamide resistant cultures which retain their virulence.

The increased tolerance to penicillin as well as the decreased virulence of the organisms apparently was a permanent characteristic. It was unaffected either by passage through susceptible animals or by rapid culturing in blood broth or by two months' storage. The organisms made resistant to penicillin retained their sensitivity to the sulfonamides, gramacidin, gliotoxin and aspergillic acid.

There is also some evidence which would indicate that bacterial resistance to penicillin may be increased

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in animals,[43] but thus far the development of resistance in man has been of minor importance.[36]

Mechanism of Bacterial Adaptation.—Studies on the tolerance of various strains of the gonococcus to sulfathiazole have furnished some indication of the way in which this organism has acquired an increased resistance to the sulfonamides.

According to Lankford[44] there is considerable evidence that naturally resistant strains of the gonococcus have been selected by the gradual elimination of the more susceptible organisms through treatment with the sulfonamides. The opportunity of selection was afforded by a wide range in the sensitivity of the gonococcus. As a consequence, the naturally resistant variants have survived to propagate the infection. As the process of elimination has continued, gonococcic infections have shown a steadily increasing tendency to become sulfonamide resistant.

Whether this theory fully explains the phenomenon or whether some subtle alteration in the metabolism of the bacterial cell may contribute to the increase in resistance is a question which has not been answered.

Spirochetal Adaptation to Penicillin.—An increased tolerance to penicillin of a virulent strain of Treponema pallidum has been reported by Dunham, Hamre, McKee and Rake.[11] Organisms recovered from a rabbit experimentally infected with the Nichols stain of Treponema pallidum and treated with amounts of penicillin insufficient to destroy the infection exhibited an increased resistance as measured by their motility. In tests with the original strain, 1,600 units of penicillin per 0.8 cc. immobilized from 62 to 81 per cent of the spirochetes, but only 6 to 18 per cent of those organisms recovered from the insufficiently treated animals were immobilized.

While these observations are of considerable interest, the problem in general of the resistance, or adaptation, of Treponema pallidum to therapeutic agents, whether arsenical or antibiotic, awaits further investigation for its ultimate solution. Essentially, very little is known of the habits of Treponema pallidum; its constitution, its mode of reproduction, as well as its entire life cycle are yet to be defined.

There are individuals with syphilitic infections which are resistant to treatment, as evidenced chiefly by infectious or serologic relapse. This is true of the more conventional therapeutic agents, such as the arsphenamines, and it is also proving to be true of penicillin.

Whether this resistance to treatment is the result of an infection with organisms of high native tolerance to the therapeutic agent or whether the native tolerance of the spirochete can be increased by exposure to subcurative amounts of the therapeutic agent are still unanswered questions. There is no knowledge of the relative sensitivity of various strains of Treponema pallidum as there is of many of the pathogenic bacteria. One would expect, however, that variations do exist and that they may be important factors in the individual's response to treatment. Nevertheless, in the interpretation of the failures of treatment it is necessary to consider the fact that the resistance of the host may play an equally, or even more, important part in the response to treatment than may the sensitivity of the infecting organism.

PENICILLIN TREATMENT OF THE SYPHILITIC PREGNANT WOMAN

NORMAN R. INGRAHAM Jr., M.D.; JOHN H. STOKES, M.D.;
HERMAN BEERMAN, M.D.; JOHN W. LENTZ, M.D.,
and
VIRGENE S. WAMMOCK, M.D.
Philadelphia

This report supplements our observations recorded in THE JOURNAL in the fall of 1944.[1] In general, our enlarged experience has tended to confirm the initial impression that sodium penicillin given by intramuscular injection is very satisfactory treatment for the syphilitic pregnant woman to prevent congenital infection of the fetus and that it may rapidly become the treatment of choice in this condition. Considerable progress has also been made in arriving at a satisfactory regimen for the infant infected with syphilis. The latter problem has seemed considerably more complex to work out than has been the treatment of syphilis in the adult with penicillin, largely because of the severity of the disease frequently encountered in the newborn in contradistinction to the adult, and because of the theoretical dangers inherent in the injudicious use of a rapidly spirillicidal drug under such circumstances. This study is still in progress and much is yet to be learned in the application of penicillin to both of these phases of syphilis. Nonetheless, as the material is accumulating a conservative appraisal of our existing knowledge seems worth while. The present paper deals with our increasing experience in the management of the syphilitic pregnant woman. Our advanced knowledge in the care of the syphilitic infant will be the subject of a separate report.

PENICILLIN TREATMENT OF THE PREGNANT WOMAN

Material.—To date we have treated 49 pregnant women with penicillin. Forty of these are Negro and 9 are white. For the most part they are young primiparas with a recently acquired infection. The oldest pregnant woman we have treated with penicillin is 36, the youngest 15, the average age is 19 years, and 21 of the total are less than 20 years of age. Two of the patients had primary syphilis, 1 in the seronegative stage at the commencement of therapy; 24 had secondary syphilis and 19 had early latent syphilis (the duration of which was known to have been less than four years).[2] This type of material was selected for the most part because it would give the greatest expectancy of infection of the fetus if the treatment proved unsuccessful. Our experience also includes the treatment of 3 women with late latent syphilis (the duration of which was more than four years) and 1 case of late congenital syphilis, treatment of which was given for interstitial keratitis. In these instances pregnancy was an incidental finding and not the primary reason for

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[43] Schmidt, L. H., and Sesler, C. L.: Development of Resistance to Penicillin by Pneumococci, Proc. Soc. Exper. Biol. & Med. **52**: 353 (April) 1943.

[44] Lankford, C. E.: Quoted by Frazier, C. N.: Microbial Adaptation to Penicillin, Texas Rep. Biol. & Med. **2**: 385, 1944.

Paper in a symposium on "The Penicillin Therapy of Syphilis" published under the auspices of the Section on Dermatology and Syphilology.

From the Institute for the Control of Syphilis, University of Pennsylvania. The work described in this paper was done under a contract recommended by the Committee on Medical Research between the Office of Scientific Research and Development and the University of Pennsylvania.

[1] Lentz, J. W.; Ingraham, N. R., Jr.; Beerman, H., and Stokes, J. H.: Penicillin in the Prevention and Treatment of Congenital Syphilis, J. A. M. A. **126**: 408 (Oct. 14) 1944.

[2] These patients were contributed from the following sources: Philadelphia General Hospital 24 cases, Hospital of University of Pennsylvania 15 cases, Pennsylvania Hospital 8 cases, Graduate Hospital 1 case, private practice of one of the co-authors 1 case.

administration of penicillin treatment. The results of the outcome of these pregnancies are less useful in determining the value of penicillin in preventing transfer of the infection from mother to child.

Treatment.—Forty-six of the 49 patients had received no previous treatment for syphilis and 3 had received some treatment with arsenical and bismuth preparations prior to pregnancy but not during it. One of these last was the patient with congenital syphilis who had received injection therapy for her interstitial keratitis; the other 2 presented latent syphilis and had received only a few weeks of treatment considerably prior to conception, insufficient it was felt to influence materially the course of the disease.

Specific therapy during the pregnancy was with penicillin only, 10 patients receiving a total dosage of 1.2 million Oxford units of sodium penicillin and 30 receiving a total of 2.4 million Oxford units. The treatment of the remaining 9 patients was individualized and not according to a definite schedule. The drug has in every instance been administered intramuscularly in distilled water, in the cases first studied at four hour intervals, but more recently at three hour intervals. In the majority of instances the initial dosage has been reduced to about one-fourth the maximum dose for the first forty-eight hours; subsequent dosage has been from 20,000 to 50,000 Oxford units per injection. The total duration of treatment for the most part has been from seven to nine days, the length of the course being determined by the size of the initial dosage. In several instances the treatment was prolonged over a period of ten to twelve days. The treatment described, except for the lowered initial dosage, is similar to that used by Mahoney and his co-workers in the treatment of early syphilis in the adult and is in accord with the recommendations of the Penicillin Panel of the Subcommittee on Venereal Diseases, National Research Council.[3]

The type of treatment of the remaining 9 patients was as follows: Three (82, 105, 135) received a total dosage of 1.2 million Oxford units of sodium penicillin in four days. In 2 of these this dosage proved to be inadequate and retreatment with 2.4 million units in seven and one-half days was carried out in each instance. One patient (130) relapsed after receiving an initial dose of 2.4 million Oxford units in seven and one-half days and required two subsequent courses totaling 6.4 million Oxford units to control her disease. Four patients (326, 365, 367, 405) each received two courses of 2.4 million Oxford units of penicillin prior to delivery, because of failure of immediate serologic response. Our subsequent observations indicate that this retreatment may have been unnecessary. One patient (336) received 1 million units of penicillin, following which treatment was discontinued because of threatened abortion. This patient received an additional 1.2 million units three months later and prior to confinement. It should be pointed out that throughout the course of this study we have been more concerned in learning whether penicillin as such is effective in the prevention of congenital syphilis than in determining the exact or optimum dosage required. We have felt it better to give too much than too little of the drug and have not desired to experiment with smaller doses at great possible risk for the child. We have been guided by the doses which have been found effective in the treatment of early adult syphilis not complicated by pregnancy, have used the larger rather than the minimal dose and have retreated the patient on slight pretext.

Initial treatment with penicillin was given in various stages of the pregnancy: prior to the sixteenth week 4 cases, between the sixteenth and thirty-second week 26 cases, after the thirty-second week 9 cases. Since fetal infection is considered to occur any time after the sixteenth week and to become increasingly more probable as term approaches, the distribution of cases throughout the pregnancy as indicated should give a fair appraisal of the value of penicillin in any stage.

Treatment Reactions.—The only reaction of note encountered in the treatment of the syphilitic pregnant woman was threatened abortion. This type of complication was mentioned briefly in our previous article[1] on this subject as being in all probability a species of therapeutic shock and we are now able to give a little more light on the probable frequency of its occurrence. One patient (211) with early latent syphilis and in the fourth month of her pregnancy aborted on the fourth day after penicillin therapy was commenced. In this instance initial dosage had been 12,500 Oxford units every four hours for the first day and 25,000 units every four hours the next two days, at which time it was increased to 50,000 units per injection. Lower abdominal pain and spotting commenced on the second day. It was, of course, difficult to know in this instance whether the fetus was living when treatment was started or whether the outcome would have been the same if penicillin was withheld when first symptoms developed. In a later case (336) with secondary syphilis and also in the fourth month vaginal bleeding likewise developed on the second day after the commencement of treatment and persisted to the fifth day, when treatment was stopped. During this period the patient had received 1 million units of penicillin: 20,000 Oxford units every three hours for the first twenty-four hours and 40,000 units every three hours thereafter. Abortion did not occur, and she was retreated in the seventh month of her pregnancy with 1.2 million Oxford units in seven and one-half days without ill effect.[3a] Patient 287, a woman with early latent syphilis, delivered a macerated stillborn fetus seven days after the commencement of her penicillin treatment and two months prior to her calculated date of confinement. In this instance it was felt that the fetus was not living when penicillin was started, a circumstance which should always be carefully ascertained if possible in commencing antisyphilitic therapy in the pregnant woman. Two other patients in this series (39, 315) developed lower abdominal cramps, vaginal bleeding and signs of threatened abortion during the penicillin course, and 1 other patient (57) developed severe abdominal cramps without bleeding, necessitating considerable sedation and active gynecologic supervision. Milder forms of lower abdominal discomfort were not uncommon during the first twenty-four to forty-eight hours, often accompanied by a febrile Herxheimer reaction. We accordingly feel that the possibility of abortion is a very real threat to some pregnant syphilitic women treated with penicillin, to be anticipated and avoided by reduction of initial dosage for forty-eight hours, bed rest, sedation as necessary and temporary suspension of the penicillin if bleeding develops.

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[3] Mahoney, J. F.; Arnold, R. C., and Harris, A.: Penicillin Treatment of Early Syphilis: A Preliminary Report, Ven. Dis. Inform. **24:** 355 (Dec.) 1943. Mahoney, J. F.; Arnold, R. C.; Sterner, B. L.; Harris, A., and Zwally, M. R.: Penicillin Treatment of Early Syphilis, J. A. M. A. **126:** 63 (Sept. 9) 1944. Moore, Mahoney, Schwartz, Sternberg and Wood.[2]

[3a] This mother subsequently proved not to be pregnant. It is not certain whether the woman miscarried following the initial course.

CLINICAL AND SEROLOGIC RESPONSE IN THE MOTHER

In all instances in which the mother had evidence of early syphilis at the start of treatment, these signs and symptoms have promptly disappeared. In only 7 instances; on the other hand, among the 40 pregnant women treated with penicillin who have thus far reached term had the blood serologic test for syphilis in the mother become negative before the baby was born. Considering the uniformly favorable ultimate outcome, to be given in more detail later, it may accordingly be concluded that a reversal to negative during the antepartum period is not necessary to obtain a normal infant.

The clinical and serologic follow-up of these cases was as outlined: A quantitative titered blood serologic test was made for syphilis reagin at the commencement of the penicillin treatment and at its completion. This test was repeated in two weeks and then at monthly intervals as long as positive. A complete physical inspection for evidence of surface lesions and a brief inquiry as to symptoms were made at each visit. After the blood test became negative it was repeated once at monthly intervals and then at three months intervals for the duration of the study. To the time of compiling this material 10 mothers had been observed for periods of one year or more after treatment with penicillin, 17 between six months and one year and 22 for less than six months. The average duration of follow-up after treatment is seven months, and 1 mother has been observed for seventeen months.

Only 20 of the 49 patients have developed persistently negative serologic tests. Time has seemed to be more a factor than dosage in bringing about these favorable results, since those which have been observed the longest are for the most part those who have received the smaller dosage (i. e. 1.2 million Oxford units). We, of course, have been unable to control the type, purity or spirillicidal value of the penicillin as such and, in fact, have used a variety of different lots and brands in these studies. The work of Dunham and Rake[4] indicates that such a consideration may be of more than passing importance. The time factor is shown in the accompanying table.

In the 1 instance in the table in which seronegativity was not obtained by the end of one year, the titer of the test is very low: less than 1 unit of syphilis reagin; in the six month to one year group 2 of the 13 cases still seropositive exhibit less than 1 unit of reagin. The average length of time from the start of penicillin treatment until a definite sustained drop was noted in syphilis reagin in the mother's blood serum as revealed by quantitative titered Kolmer, Wassermann and Kline tests was sixty days. The average length of time after penicillin until sustained seronegativity was obtained in the 20 cases which have thus far become seronegative was one hundred and ninety days. The most rapid reversal to complete and sustained seronegativity was in the single case which was seronegative but dark field positive at the commencement of treatment. This case (386) became temporarily positive with quantitative titer as high as 4 units of syphilis reagin during the course of penicillin therapy but reverted to negative by the twenty-second day and remained so. Of those cases which were definitely seropositive at the initiation of treatment the earliest sustained complete reversal to negative observed was on the sixty-fourth day, a case (350) of early latent syphilis treated with 2.4 million units of penicillin. The case (96, secondary syphilis treated with 2.4 million units of penicillin), which remained positive longest after penicillin but eventually reversed to sustained seronegativity was noted to have its first negative reaction on the three hundred and sixty-fifth day.

These results would seem to indicate that the pregnant syphilitic woman with early syphilis, treated with penicillin, may be expected to remain seropositive even though the treatment is apparently effective, for as long as six months to one year after the treatment is completed. The serologic response here noted is considerably slower than that recorded by Moore and the National Research Council's Penicillin Panel[5] for early syphilis as a whole. They found an apparent trend to serologic reversal in a period of about twenty days after the start of treatment as compared to sixty days in the present series. Further, when 1.2 million units of penicillin was used, the mean serologic response reached negativity at about the seventieth day as compared to the one hundred and ninetieth day in the present series. Whether this slower response is the result of biologic factors associated with pregnancy makes interesting speculation, but definite conclusions must await further observation. The total number of cases observed is small; the effective amount of "penicillin" for syphilis in the crude product awaits satisfactory standardization; variations in the sensitivity of the tests employed in various laboratories may all be playing as important a role in influencing this apparent tendency to delayed serologic response as is pregnancy itself.

Serologic Response of 49 Pregnant Women Treated with Penicillin

(For dosage range see text)

Period of Observation After Penicillin	Patients with Still Positive Serologic Tests		Patients with Negative Serologic Tests	
	Number	Per Cent	Number	Per Cent
1. More than 1 year............	1	10	9	90
2. Between 6 months and 1 year	13	76	4	14
3. Less than 6 months..........	15	65	7	35

CLINICAL AND SEROLOGIC RELAPSE IN THE MOTHER

Among the 49 cases there have been 2 which have relapsed clinically and 1 which has relapsed serologically. There have also been 4 cases, as already mentioned, that have been retreated because of failure to obtain any serologic response from the initial course of 2.4 million Oxford units of penicillin. Two of these retreated cases were of early latent syphilis (326, 367) retreated five and one-half months and four and one-half months after initial therapy. The other 2 were secondary syphilis (cases 365, 405) retreated four months and three months respectively after initial treatment.

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[4] Dunham, W. B., and Rake, G.: The Relative Activity of Partially Purified Penicillin and of Crystalline Penicillin G on Treponema Pallidum, Am. J. Syph., Gonor. & Ven. Dis. **29**: 214 (March) 1945.

[5] Moore, J. E.; Mahoney, J. F.; Schwartz, W.; Sternberg, T., and Wood, W. B.: The Treatment of Early Syphilis with Penicillin, J. A. M. A. **126**: 67 (Sept. 9) 1944.

To judge from the analysis in the preceding section, in each of these instances it may have been too soon to expect noticeable serologic response, and retreatment may have been unnecessary. Nonetheless with the child's life at stake we preferred to adopt a conservative attitude and to leave no stone unturned in obtaining a healthy infant. A very brief summary of the treatment and the serologic and clinical response in each of the relapsing cases follows:

Case 105.—*Relapsing secondary syphilis at time of delivery. Infant infected.*

A Negro woman aged 21 was diagnosed as having secondary syphilis and received 1.2 million Oxford units of sodium penicillin from May 24 to May 28, 1944. The titer of her blood serologic test to the quantitative Kolmer Wassermann technic was 128 units at the commencement of therapy. Her initial secondary eruption healed within ten days, but there was no reduction in the blood serologic test up to the time of confinement. She was delivered of a physically normal full term infant on September 23 but while on the delivery table was noted to have condylomata lata, which proved on subsequent study by dark field illumination to contain Treponema pallidum. She was given a second course of 2.5 million Oxford units of sodium penicillin, which served to heal her genital lesions, but there has still been no reduction in blood serologic titer to the time of the last test, June 1, 1945. Her infant had 64 units of syphilis reagin in its blood when born. This rapidly dropped to 2 units within the next seven weeks but then rapidly rose to 256 units. The roentgenogram of the infant's long bones was normal during the neonatal period but showed early osteochondritis at 6 weeks and advanced changes at nine weeks. Dark field positive skin lesions developed in the third month, and treatment with penicillin was commenced on the infant Dec. 20, 1944. The initial clinical response in the infant to penicillin was good, and his first negative blood serologic test was obtained June 1, 1945.

Case 130.—*Relapsing secondary syphilis four weeks after delivery. Infant apparently normal.*

A Negro woman aged 25 was treated for secondary syphilis with 2.4 million Oxford units of sodium penicillin in seven and one-half days starting June 15, 1944. The initial quantitative titer of her blood serologic test as determined by the Kolmer Wassermann technic was 32 units, which is lower than is usually obtained in active secondary syphilis. This declined immediately, being 8 units on July 6 and between 2 and 4 units in mid-August. On September 29 her blood serologic titer had risen to 64 units and she developed dark field positive surface lesions. On October 21 she received a second course of 2.4 million units of sodium penicillin and when serologic response was not evident an additional course of 4 million Oxford units of sodium penicillin was given over a period of six days (January 1945). Her blood serologic test for syphilis was negative for the first time May 21, 1945. Her infant was born Sept. 1, 1944 before her infectious relapse. He had a negative blood serologic test at the time of delivery and apparently escaped infection. He was separated from the mother during her infectious relapse period and was normal to physical and roentgenologic examination and had a negative blood serologic test when last examined, April 27, 1945.

Case 432.—*Early latent syphilis, treated in last week of pregnancy. Seroreiapse in mother. Infant apparently normal at two months post partum.*

A Negro woman aged 18 received 2.4 million Oxford units of sodium penicillin starting on March 20, 1945. Her pretreatment blood serologic titer was 128 units (Kolmer titered Wassermann). She was delivered of a clinically normal infant with 32 units of syphilis reagin in his blood stream on March 28, 1945. The infant's titer had dropped to less than 1 unit by May 11 and was completely negative on May 25. He was normal to physical examination and a roentgenogram of the long bones was negative through this period. There is still some possibility that this infant may be syphilitic but the chances are remote: statistically not greater than 5 per cent. The mother's blood serologic titer receded rapidly following her penicillin treatment. It was significantly reduced below the initial 128 units on March 31 and was completely negative on May 11. Since then it has increased rapidly and on May 26 and June 1, 1945 was between 128 and 256 units, as high as at any period in our observation. Retreatment has been ordered but not yet carried out at the time of this writing. She has shown no surface lesions during this period.

Twenty-seven of our pregnant women have been observed for periods of more than six months after their penicillin treatment. Limiting the study to this group, the clinical and serologic relapse rate among the mothers has been 3 in 27, or 11 per cent.

SYPHILIS STATUS OF THE NEWBORN INFANTS

Of the 49 women in this study treated with penicillin, 39 have at the time of compilation of these data reached the termination of their pregnancy. One woman has completed two pregnancies during the course of this study. Of these 40 confinements 37 have resulted in the birth of apparently normal children, 1 in an abortion prior to the sixteenth week and 1 in a miscarriage after the midpoint in the pregnancy. These last 2 are cases 211 and 287, described in a previous section, and could not be attributed to penicillin failure in the strict sense of the term. Only 1 living syphilitic child was born.

The postnatal medical follow-up has been active and has consisted in the following: At the time of birth, a cord Wassermann test was taken and in many instances dark field examination of the umbilical vein was performed.[6] The latter procedure was carried out routinely when the study was started, but as it became apparent that penicillin was an effective spirillicidal agent in the pregnant woman and that the infants were uniformly normal it was felt that this procedure was superfluous and it was discontinued. The blood serologic test was repeated uniformly on the infant within the next week, before discharge from the maternity nursery. A roentgenogram of the long bones of one upper and one lower extremity was also carried out routinely at about the fifth day. If the blood serologic test for syphilis obtained on the infant in the maternity nursery was positive, this test was repeated at the age of 3 weeks and weekly thereafter until it became definitely negative or, in the syphilitic infant, until a definite increase in titer was observed. A roentgenogram of the long bones was repeated on all infants at the age of 6 weeks. Infants seronegative at birth and seropositive infants who subsequently became seronegative were uniformly subjected to a blood serologic test at the age of 1 month, 2 months, 3 months and 6 months and then at three month intervals for the duration of the study. Complete physical examinations were performed at each visit.

Since this is an interim report in a continuing study, all infants born have not as yet completed a satisfactory term of postnatal observation. The adequacy of this aspect of the study may be gaged by the following figures: The maximum duration of postpartum follow-up of the infant is three hundred and eighty-eight days and the average duration is five months. Three infants have been followed more than one year, 11 between six months and one year, 13 between two and six months and 11 for periods of less than two months. It is our feeling that those infants followed for one year have had their status with respect to syphilis definitely established; for the infants followed for six months or more the diagnosis normal (or nonsyphilitic) is presumptively correct; for infants followed for more than two months with the procedure as outlined it is unlikely that the diagnosis will have to be modified; but a follow-up period of less than two months must be considered completely inadequate in determining the syphilis status of the infant.

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[6] Ingraham, N. R., Jr.: Congenital Syphilis: Diagnosis by Means of Dark Field Examination of Scrapings from the Umbilical Vein, J. A. M. A. **105**: 560 (Aug. 24) 1935.

Fourteen (38 per cent) of the 37 infants born alive and physically normal to date had positive blood serologic tests at the time of delivery. This percentage is somewhat higher than in previous series reported from these same clinics,[7] which have ranged from 6 to 16 per cent. It is probably accounted for by the fact that the mothers all had early syphilis and in most instances still showed relatively high titers to the quantitative tests employed at the time of delivery. In every instance in which the infant was positive, the mother was also seropositive at the time of delivery. The degree of positiveness in the infant's blood in quantitative Kolmer, Wassermann and Kline units has ranged from 32 to less than 1. Excluding the only syphilitic baby, in those infants which have been followed for more than one month postnatally the initially positive tests reverted to complete negativity in twenty-nine days on an average. Only 3 cases required more than one month to become normal: case 124, thirty-two days; case 301, fifty-one days; case 432, fifty-eight days. The clinical course of the only syphilitic infant appearing in this series thus far is given in the detailed report of case 105. Again, except for the syphilitic infant, all roentgenograms of the long bones performed in the nursery or at 6 weeks or later have been normal. Physical examinations have shown no evidence of syphilis.

The infant offspring in case 25 died at the age of 7 months from an acute febrile illness the exact nature of which was not determined but which could not apparently be attributed to syphilis. The mother, a Negro woman aged 18, had received 1.2 million Oxford units of sodium penicillin in divided dosage over a period of seven and one-half days, for dark field positive, seropositive secondary syphilis from Jan. 10 to 18, 1944. Her clinical response was normal. She gave birth to an apparently normal child on April 13, 1944 who had 16 units of syphilis reagin in his blood stream during the immediate neonatal period. This test had become negative by the twentieth day and remained negative to repeated testing thereafter. The physical findings in the infant and the roentgenograms of the long bones were likewise normal. In the latter part of October of the same year the infant was returned to the hospital with an acute febrile illness and died within three days on October 24. An autopsy did not reveal the exact cause of death, but no evidence of syphilis was revealed to detailed gross and microscopic examination of the organs, including silver stain for Treponema pallidum. It was felt that this death was not caused by syphilis and that it did not constitute a penicillin failure.

Case 13, contained in table 1 of our previous report,[1] is of particular interest because the mother gave birth to a second apparently normal infant on March 29, 1945, exactly one year after the birth of her first child, which is likewise still normal. This 29 year old Negro woman was treated for secondary syphilis with 1.2 million Oxford units of sodium penicillin in seven and one-half days commencing Dec. 16, 1943. She has received no treatment for her syphilis since and went through her second pregnancy without specific therapy. The blood serologic tests and roentgenograms of the infant born March 29, 1945 have remained normal to June 12, 1945. Although follow-up of the infant (two and one-half months) postnatally could not as yet be considered adequate, the preliminary indications are that the mother has been cured of her disease by this single course of penicillin and that treatment in subsequent pregnancies is probably unnecessary.

SUMMARY OF PRESENT STATUS OF KNOWLEDGE IN TREATMENT OF SYPHILITIC PREGNANT WOMEN WITH PENICILLIN

In the material available at the time of the compilation of these data, among 27 infants followed for periods of more than two months postnatally, many for much longer periods, 24 born of mothers with early syphilis treated with penicillin during their pregnancy, only 1 has been shown to be infected with syphilis. This success, which approaches 97 per cent if borne out by further observation as the study progresses, indicates a result at least equal to that obtained by the arsenical-bismuth regimen now generally employed in the prevention of congenital syphilis. The treatment may, moreover, be given in a single course over a short period and is apparently curative of the mother's disease at the same time as it prevents transfer from mother to fetus in utero. We cannot be certain at this writing whether this success is as applicable to the commonly occurring latent syphilis of unknown duration in the pregnant woman as it is to early syphilis in pregnancy, since our experience covers to date almost exclusively the latter. It is now demonstrated through laboratory evidence[8] that penicillin will pass from the maternal to the fetal blood stream at term. There is some indirect clinical evidence in the present study to indicate that penicillin may traverse the placental barrier earlier in the pregnancy in that 9 of the women in the present series were treated after the thirty-second week of the pregnancy with uniformly good results when the possibility of infection of the fetus would be presumably high. Since the fetus may be infected anytime after the sixteenth week, the permeability of the placenta to penicillin from the fourth to the ninth lunar month is a critical issue in the prevention of congenital syphilis by a single course of the drug during pregnancy.

Although it is yet not possible to draw definite conclusions as to the preferred method of treatment of the pregnant woman with syphilis, our experience with penicillin is such as to give definite impressions. Our only treatment failure with the infant occurred in a patient who received her total therapy in a four day period. We feel that treatment should be prolonged for at least seven and one-half days, as is now usually recommended for early syphilis in the adult, and possibly a little longer. There is no real indication that 2.4 million Oxford units given over the longer interval (seven and one-half to twelve days) is any more successful in preventing congenital syphilis and in curing the disease in the mother than is 1.2 million units in seven to nine days. Our 2 other initial treatment failures in the mother have both occurred with the use of 2.4 million units total dosage, 1 of the women with symptomatic early, the other with latent syphilis. In general, nonetheless, we have felt that, since inadequate dosage may be serious for the infant, it is better to err on the side of giving too much rather than too little penicillin.

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[7] Ingraham, N. R., Jr.: The Diagnosis of Infantile Congenital Syphilis During the Period of Doubt, Am. J. Syph. & Neurol. **19**: 547 (Oct.) 1935. Ingraham, N. R., Jr.; Shaffer, B.; Spence, B. E., and Gordon, J. H.: The Adequate Diagnosis of Infantile Congenital Syphilis, Arch. Dermat. & Syph. **43**: 323 (Feb.) 1941. Ingraham, N. R., Jr.: The Management of Syphilis in the Newborn and During Early Childhood, Pennsylvania M. J. **42**: 920 (May) 1939.

[8] Herrell, W. E.; Nicholas, D. R., and Heilman, Dorothy H.: Penicillin: Its Usefulness, Limitations, Diffusion and Detection, with an Analysis of 150 Cases in Which It Was Employed, J. A. M. A. **125**: 1003 (Aug. 12) 1944. Greene, H. J., and Hobby, G. L.: Transmission of Penicillin Through Human Placenta, Proc. Soc. Exper. Biol. & Med. **57**: 282 (Nov.) 1944.

Specifically, if there were no complications we would use a total dosage of 2.4 million Oxford units of sodium penicillin given over a period of eight to nine days as follows: 10,000 units in each three hour injection intramuscularly for eight injections and 20,000 units in each three hour injection for the next eight injections, followed by fifty-four three hourly injections of 40,000 units each. Complications arising from therapy, from pregnancy or from syphilis require strict individualization. Since our results have been satisfactory without the supplementary use of other types of chemotherapy for syphilis, we can see no reason at this time for employing any drug but penicillin provided the initial response is satisfactory.

CONCLUSIONS

The following conclusions are based on a study still in progress and are subject to modification as additional information is accumulated. They do, however, represent our present working knowledge of the treatment of the pregnant woman with early syphilis with sodium penicillin by intramuscular injection and as such are of value as an interim report.

1. One syphilitic infant has occurred among 37 syphilitic pregnancies, treated with penicillin, which have reached term. In 27 of these cases the infant has been followed for periods greater than two months postnatally and the presumptive evidence that the infant is normal is good. This represents a degree of success equal to if not greater than that obtained with the arsenical-bismuth regimens at present widely employed.

2. Either 1.2 million or 2.4 million Oxford units total dosage seem satisfactory for the pregnant woman, though the larger dosage is preferred. It is recommended that the dosage be reduced to one fourth during the first twenty-four hours and to one half during the second twenty-four hours to reduce the possibility of threatened abortion from therapeutic shock and that the duration of treatment be prolonged to eight or nine days.

3. The serologic response to penicillin treatment of the pregnant woman is apparently considerably slower than the average for early acquired syphilis in the adult. It is not necessary, on the other hand, that the mother be seronegative at the time of confinement in order for the infant to be normal.

4. As a result of our continued use of penicillin in the treatment of the pregnant woman with early syphilis, we are confident that this drug represents a distinct advantage in that it is a convenient, safe and effective mode of therapy.

PENICILLIN IN PREVENTION OF PRENATAL SYPHILIS

MARY STEWART GOODWIN, M.D.
and
JOSEPH EARLE MOORE, M.D.
Baltimore

Ingraham and his associates[1] have recently published a communication dealing with penicillin treatment of the syphilitic pregnant woman. Their report deals with 49 pregnant women, of whom, at the time of treatment, 26 had manifest early (primary or secondary), 19 early latent (no symptoms; infection of less than four years' duration), 3 late latent (more than four years' duration) and 1 congenital syphilis. At the time of their writing, 39 of these women had delivered a total of 40 infants (one of them 2 pregnancies).[2]

The spectacularly favorable results in the prevention of syphilis in the fetus reported by Ingraham's group is confirmed by our own material. We have treated 31 mothers, all of whom had early infectious (primary or secondary) syphilis at the time of treatment, all of whom have now delivered and all infants are apparently normal. Our own material will be compared with that of Ingraham and his group in a series of tables, with accompanying comment.

TYPE OF SYPHILIS IN THE MOTHER

The published material of the Philadelphia group is not entirely comparable with that in Baltimore. Of their 49 patients only 26 had lesions of early syphilis. The Baltimore group has up to this point deliberately avoided the penicillin treatment of pregnant women with latent syphilis, confining itself entirely to manifest early (primary or secondary) syphilis in the mother. This limitation of the clinical material for the purposes of evaluation of penicillin was undertaken because of (*a*) the practical certainty of infection of a fetus born of a mother with outspoken early syphilis and (*b*) the lack of such certainty in infants born of mothers with latent syphilis. Though the exact percentage probabilities have never been accurately defined, it is a well known fact that mothers with latent syphilis may deliver normal nonsyphilitic children, the risk of syphilis to the child being roughly in inverse proportion to the duration of syphilis in the mother (Kassowitz's law).[3] We therefore proceeded to test the efficacy of penicillin in the prevention of infantile congenital syphilis in that group of cases in which the probability of infection of the fetus was largest.

Through Ingraham's[4] courtesy we are enabled to present the Philadelphia mothers with early syphilis (status as of Sept. 10, 1945) in exact parallel with our own cases, thus adding to the value of the total series by doubling the numbers and eliminating confusion from the inclusion of latent syphilis in the published Philadelphia material.

From the Johns Hopkins University and U. S. Public Health Service Venereal Disease Research and Post Graduate Training Center, Baltimore.

The work described in this paper was done under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and the Johns Hopkins University.

[1] Ingraham, N. R.; Stokes, J. H.; Beerman, H.; Lentz, J. W., and Wammock, V. S.: Penicillin Treatment of the Syphilitic Pregnant Woman: A Progress Report, J. A. M. A., in press.

[2] These data are taken from a carbon copy of their manuscript, which we have been permitted to see prior to its publication. Certain minor alterations may have been made by the Philadelphia authors in galley proof.

[3] To be discussed later.

[4] Ingraham, N. R.: Personal communication.

PREVIOUS TREATMENT GIVEN TO THE MOTHER

None of the Philadelphia patients with early syphilis and 2 of the 31 Baltimore patients had received previous antisyphilitic treatment (table 1). One of these was a Negro woman aged 19 who had primary syphilis in November 1943. Between November 1943 and April 1944 she had received thirty intravenous injections of oxophenarsine hydrochloride (mapharsen) totaling 1,800 mg. and eight intramuscular injections of metallic bismuth totaling 1.04 Gm. Her blood serologic test remained negative from May 1944 to July 1944. During July 1944 her sexual partner had an infectious relapse of secondary syphilis, and the patient's serologic test again became positive with a quantitative titer of 16 units, and dark field positive genital lesions occurred. It was felt that she had either a reinfection or a relapse, probably the former. She was retreated with 1.2 million units of penicillin in August 1944 in the fourth month of pregnancy.

The second patient was a Negro woman aged 19 who at 4 months of age was observed in the Johns Hopkins Hospital to have a positive serologic test for syphilis and outspoken signs of congenital syphilis, including snuffles and a generalized skin eruption. She received irregular treatment over a period of eight years, totaling ten doses of sulfarsphenamine, seven doses of neoarsphenamine and eight doses of bismuth. Her spinal fluid examination was negative at the age of 17 years, and her blood serologic tests were repeatedly negative during eighteen years after the initial diagnosis of congenital syphilis was made. She apparently had a reinfection [5] when she was found in February 1944 to have secondary syphilis with dark field positive mucosal lesions and a quantitative blood serologic titer of 256 units. Not pregnant at this time, she was given 800,000 units of penicillin (in eight doses of 100,000 units each at twelve hourly intervals) for secondary syphilis. Her blood serologic titer declined to 1 unit six months after completion of this treatment; but one month later it relapsed to 64 units. At this time (October 1944) she was one month pregnant and was retreated with 3.6 million units of penicillin.

THE DOSAGE OF PENICILLIN

In the Philadelphia series 24 mothers received a single course of penicillin only; 2 received multiple courses during pregnancy. In the Baltimore series the corresponding figures are twenty-eight single courses and three multiple courses. The total dosage range of the single courses in both Baltimore and Philadelphia groups is comparable, the majority of patients having received from 1.2 to 2.4 million units. In the Baltimore group 3 patients were given only 600,000 units and 4 others a total of 3.6 million units.

In the Philadelphia series 2 patients were retreated during pregnancy. Each of these received 2.4 million units of penicillin as a first course in the fourth and fifth months of pregnancy respectively. One was retreated with a second course of 4.8 million units in the ninth month of pregnancy, four months after the first course; the other received a second course of 2.4 million units in the seventh month of pregnancy, three months after the first course. In each case retreatment was given because of failure of immediate serologic response. In each case the infant was born alive and apparently normal.

All of the 3 Baltimore patients to whom retreatment during pregnancy was given had serologic relapses following an initial course of penicillin. One of the 3 was initially treated with 600,000 units, 1 with 800,000 units and 1 with 2,400,000 units of penicillin. All 3 were in the last trimester of pregnancy when they developed serologic relapse.

These relapses in the Baltimore group occurred in the 3 patients who received second courses of penicillin as described in the previous paragraph.

The first patient had an initial course of penicillin of 2,400,000 units (20,000 units every three hours for 120 doses). She had dark field positive lesions of secondary syphilis diagnosed in the fourth month of pregnancy. She was seronegative four and five months after the first course of penicillin and then at six months after treatment (and in the last month of pregnancy) developed a serologic relapse to 16 units. She was then retreated with 1,560,000 units of penicillin. On completion of this amount of penicillin the patient, being at full term, delivered spontaneously. Penicillin was continued after delivery to a total of 4,640,000 units in this second course.

The second patient received 800,000 units in the initial course of penicillin for primary syphilis with dark field positive lesions at a time when she was about two weeks pregnant. She was serologically negative four months after penicillin treatment and developed serologic relapse seven months after treatment (with a titer of 2 units). She was retreated with 3,600,000 units of penicillin in the seventh month of pregnancy.

The third, and last, of the Baltimore group received 600,000 units in the second month of pregnancy for secondary syphilis with dark field positive lesions. Her serologic titer declined to 2 units two months after treatment and then rose in the third and fourth month to 16 units. She was considered to have a serologic relapse and was retreated with 1,200,000 units in the sixth month of pregnancy.

Table 1.—*Status of Syphilitic Mothers and Treatment Given to Them During Pregnancy*

(As of Sept. 10, 1945)

Author	Total Mothers Treated	Primary Syphilis	Secondary Syphilis	Previous Treatment Given (As + Bi)	Total Dosage of Penicillin, Million Units: Single Course Only				Multiple Courses					Duration of Penicillin Treatment	Duration of Pregnancy at Time of Penicillin Treatment, Weeks		
					0.6	1.2	2.4	3.6	1.8	3.9	4.4	4.8	7.2		<16	16-32	>32
Ingraham and others	26	2	21	0	..	10	14	..	..	..	..	1	1	4-11 days	1	18	7
Goodwin and Moore	31	5	26	2*	3	14	7	4	1	1	1	..	..	4-15 days	13	13	5
Total	57	7	50	2	3	24	21	4	1	1	1	1	1		14	31	12

* See text.

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[5] This is an additional example of reinfection in treated congenital syphilis not previously reported from this clinic in the two papers by Hahn (Am. J. Syph., Gonor. & Ven. Dis. 25: 200, 1941) and Allison (ibid. 26: 212, 1942).

DURATION OF PREGNANCY AT THE TIME OF PENICILLIN TREATMENT

As is indicated in table 1 of the combined Philadelphia and Baltimore series 14 mothers were treated before the sixteenth week of pregnancy, to 31 treatment was given between the sixteenth and thirty-second weeks, and in 12 the duration of pregnancy was thirty-two weeks or longer at the time of treatment. As Ingraham and his group point out, "since fetal infection is considered to occur any time after the sixteenth week and to become increasingly more probable as term approaches, the distribution of cases throughout the pregnancy, as indicated, should give a fair appraisal of the worth of penicillin in any stage [of pregnancy]."

ABORTION DURING TREATMENT (THERAPEUTIC SHOCK? DIRECT PENICILLIN ACTION?)

While Ingraham and his associates observed two actual and two threatened abortions among their 49 women treated, three of these accidents occurred in patients with latent syphilis. A similar accident was not observed in any of the 31 Baltimore cases, all with early syphilis (table 2). The Philadelphia authors have interpreted this phenomenon as possibly due to therapeutic shock (Jarisch-Herxheimer reaction) and are inclined to advise a reduction of initial penicillin dosage for the first forty-eight hours of treatment of pregnant women. The fact that 3 of their 4 actual and threatened abortions were in patients with latent syphilis, coupled with the total absence of phenomenon in 25 of their 26 and in our own 30 patients with early syphilis, tends, we believe, to weaken this argument. Therapeutic shock from penicillin is considerably more frequent and more intense in males and nonpregnant females with early than in those with late syphilis. If this reaction were a factor in actual or threatened abortion, one would naturally expect its incidence to be high in early syphilis of the mother (1 example in 57 cases of the combined series) and low in latent infections of longer duration (though actually 3 examples in 23 such women in the published Philadelphia paper). We are therefore not inclined to share the opinions either that abortion, actual or threatened, is a frequent evidence of therapeutic shock in penicillin treated mothers or that great initial caution in treatment is necessary or desirable to prevent this treatment reaction.[5a]

TABLE 2.—*Outcome of Penicillin Treatment in Mothers*

(As of Sept. 10, 1945)

Authors	Abortions		Relapses in Mothers		No. of Mothers Followed Serologically for 6+ Mos. After Penicillin Treatment	Of These, Mother's Blood †	
	Actual	Threatened	Clinical	Serologic		Seronegative	Still Positive
Ingraham and others	0	1	2*	0	22	12	10
Goodwin and Moore	0	0	0	3‡	24	20	4
Total	0	1	2	3	46	32	14

* After 1.2 and 2.4 million units, respectively.

† For discussion, see text.

‡ Two after 800,000 and one after 2.4 million units.

Leavitt,[6] who has observed 2 actual and 6 threatened abortions among 21 pregnant syphilitic women (type of syphilis in the mother not stated), suggests an alternative explanation for the phenomenon. Seven of his 8 reacting patients were treated with the same lot of penicillin. This fact and "the oxytocic action of ergot, a biologic product of another mold (Claviceps purpurea)" suggest to him that penicillin or some impurity contained in commercial penicillin may exert a directly stimulating effect on the contractility of the uterine musculature.

If one combines the total of 101 women treated by Ingraham and his group, Leavitt and ourselves, there were 4 actual and 7 threatened abortions. These figures are not statistically impressive as incriminating penicillin as a cause of abortion since it is a well known fact that in obstetrics that approximately 10 per cent of all pregnancies in normal nonsyphilitic, nonpenicillin treated women end in spontaneous abortion (usually early in pregnancy) and perhaps another 5 to 10 per cent have threatened abortions.[7] The abortions, actual and threatened, among these penicillin treated syphilitic women do not equal the normally expected incidence of spontaneous abortions.

The solution of the problem as to the effect of penicillin in producing abortion is readily obtainable from simple [illegible] linical studies now in progress. [illegible] to be gained from these studies, we feel that the suggestion that penicillin has abortifacient effects is unwarranted by the facts.

CLINICAL AND SEROLOGIC RELAPSES IN THE MOTHER

In the Philadelphia group (table 2) one Negro woman with secondary syphilis who received 1.2 million units of penicillin during the fifth month of pregnancy was found to have a clinical relapse at the time of delivery. Since the infant born of this mother was the only one in the entire series who has so far developed congenital syphilis, it is important to note that in the interval between treatment and delivery the titer of the mother's blood serologic test did not decline. This fact suggests that, in early syphilis of the mother at least (as contrasted to latent infections), failure of maternal serologic response to penicillin treatment administered early in pregnancy is an indication for retreatment of the mother before delivery. It is possible that even this single failure of treatment in the infant might have been prevented by retreatment of the mother.

A second Philadelphia Negro woman with secondary syphilis, treated with 2.4 million units during the seventh month of pregnancy, developed infectious clinical relapse four weeks after the delivery at term of a normal infant.

The 3 Baltimore maternal relapses, all serologic only, without clinical evidence of infectious relapse, have been described in the paragraph dealing with retreatment of the mother. With regard to the question of retreatment, it is, we think, significant that the infants born of these 3 relapsing and retreated mothers, and of the 2 retreated Philadelphia mothers, were all normal.

SEROLOGIC PROGRESS OF THE MOTHERS

As indicated in table 2, only 12 of the 22 Philadelphia patients followed for six months or longer after treatment have become seronegative, whereas 20 of the 24 Baltimore patients followed for comparable periods of time have reverted to seronegativity.

[5a] Since this paper was submitted for publication, Speiser and Thomas (J. Ven. Dis. Inform. 27: 20 [Jan.] 1946) have likewise noted the absence of abortifacient effect of penicillin in 149 pregnant women with early syphilis treated by them.

[6] Leavitt, H. M.: Clinical Action of Penicillin on the Uterus, Ven. Dis. Inform. 26: 150 (July) 1945.

[7] Eastman, N. J.: Personal communication.

In their published paper the Philadelphia workers have suggested, on the basis of their results in early and latent syphilis combined together, "that the pregnant syphilitic women with *early*[8] syphilis, treated with penicillin, may be expected to remain seropositive even though the treatment is apparently effective, for as long as six months to one year. . . . The serologic response here noted is considerably slower than that recorded . . . for early syphilis as a whole." This conclusion seems unjustified, because of lack of separation of their published material as between early and latent syphilis. It is already known that the serologic response to penicillin of patients with long-standing syphilitic infection (i. e. of two years' duration or longer) is considerably less prompt and less in proportion of numbers than in manifest early infectious (primary or secondary) syphilis.

In our material, which consists entirely of patients with early syphilis, we have seen nothing to suggest that pregnancy exerts any effect in slowing up serologic response, since our pregnant patients have reverted toward negative at the same rate as nonpregnant females or males.

TABLE 3.—*Status of Infants Born of Penicillin Treated Mothers*
(As of Sept. 10, 1945)

Author	Number of Mothers So Far Delivered	Number of Infants	Infants Born Alive Apparently Normal at Birth	Infants Developing Syphilis	Infants Seropositive at Birth, Reverting Spontaneously to Negative During Specified Month of Life			Duration of Follow-Up of Infants Apparently Normal at Birth, Months				Follow-Up of Infants Apparently Normal at Birth			Death of Infants Apparently Normal at Birth
					1st	2d	3d	2	2-6	6-12	12+	P. E.	X-Ray	Serologic	
Ingraham and others	26	27[1]	27	1[2]	7	2	..	3	11	6	7	26 normal	26 normal	26 normal	1 at 7 mo. of age from acute febrile illness, undetermined cause, autopsy negative for syphilis
Goodwin and Moore	31	33[3]	33	0	8	..	1	8	18	7	..	33 normal	All[4] normal	33 normal	1 at 19 weeks, acute nutritional disturbance and sickle cell anemia; STS negative at time; no autopsy
Total............	57	60	60	1	15	2	1	11	29	13	7	59 normal	All[4] normal	59 normal	2

1. One mother had two pregnancies during the second of which no treatment was given.
2. Mother given 1.2 million units for secondary syphilis at 5th month of pregnancy; clinical relapse in mother at 9th month of pregnancy; infant infected.
3. Two mothers had two pregnancies during the second of which no treatment was given.
4. Roentgenograms done routinely in Baltimore (see text) on only 17 of 33 infants because of shortage of x-ray film, but all of them normal.

OUTCOME OF PENICILLIN TREATMENT IN THE PREVENTION OF CONGENITAL SYPHILIS

In this respect we are able to confirm completely the spectacular results reported by the Philadelphia group (table 3). Of the 26 Philadelphia mothers with early syphilis (included herewith through Ingraham's courtesy), all had delivered as of Sept. 10, 1945. One of these 26 women has had two pregnancies, during the first of which penicillin was given, and during the second no treatment of any kind. All of the 27 infants born of these 26 mothers were alive and apparently normal at birth. One of them, born of the mother who was found to have infectious relapse at the time of delivery, developed clinical, serologic and x-ray evidence of syphilis, beginning some seven weeks after birth. The other 26 infants are still normal.

All of the 31 mothers in our own series have now been delivered. Two of them have been pregnant twice, penicillin being administered in each case during the first pregnancy, and no treatment during the second. Thirty-three infants are therefore represented. All of these were born alive and apparently normal at birth. Not one of the infants has developed any clinical, serologic or roentgenographic evidence of congenital syphilis.

Of the combined 60 infants in the Philadelphia and Baltimore series (excluding the 1 Philadelphia infant who developed congenital syphilis) 11 have been followed for less than two months, 29 for from two to six months, 13 for from six to twelve months and 7 for more than twelve months. The Baltimore infants have been followed in the same manner as those of the Philadelphia series, with frequently repeated quantitatively titered blood serologic tests, roentgenograms of the long bones (see footnote 4 in table 3) and physical examinations.

We would modify the probable outcome in the infants of penicillin treated syphilitic mothers from the published opinion expressed by Ingraham and his group, as follows: We believe that in all of the infants followed for six months or more the diagnosis normal (or nonsyphilitic) is definitely established. In infants followed for from two to six months it is highly improbable that the diagnosis must be later modified. We agree, of course, that no final decision is possible in infants followed less than two months.

In this connection attention is particularly directed to the fact that in the combined Philadelphia and Baltimore series 19 infants apparently normal at birth had at the time or within the first week of life positive blood serologic tests in cord or venous blood. In all of these infants the mothers were seropositive at the time of delivery. One, the Philadelphia child just referred to, has developed congenital syphilis. The other 18 (table 3) have all become spontaneously seronegative. In 15 of these 18 permanent seronegativity was achieved within the first month of life, in 2 within the second month and in 1 within the third month (on the seventy-third day). These data support the opinion that following penicillin treatment of the infected syphilitic mother a three months observation period of the child, with sustained seronegativity and absence of clinical or roentgenologic evidence of syphilis, represents at least 95 per cent certainty that the child has not been infected.

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[8] Italics ours.

DEATH OF INFANTS APPARENTLY NORMAL AT BIRTH

Of the 60 children born alive in the combined Baltimore and Philadelphia series, 2 have subsequently died at nineteen weeks and seven months respectively. Neither of these deaths could be attributed to syphilis.

COMMENT

Comparison of Penicillin Results in the Prevention of Prenatal Syphilis with Those Obtainable from Metal Chemotherapy.—In most, if not all, of the older literature dealing with the prevention of prenatal syphilis by treatment of the mother with "standard" prolonged arsenic-bismuth-mercury, there is a curious hiatus. Most of the reporters of large series of cases (including the several publications of the University of Pennsylvania group, mostly by Ingraham, and including also the extensive study of McKelvey and Turner [9] from our own clinic) have fallen into the error of disregarding the stage of clinical manifestations and the duration of infection in the mother. Results have been based on a specified number of mothers "with syphilis" without regard to the varying prognosis as to the child in the absence of maternal treatment, depending on these important factors.

TABLE 4.—*Outcome of Pregnancy in Syphilitic Women Arranged by Duration of Infection in the Mother*

(Modified from Paley [10])

Amount of Treatment Given Mother During Pregnancy, Doses of Neoarsphenamine	Duration of Mother's Infection *					
	Less Than 2 Years †		2-5 Years		More Than 5 Years	
	Number of Mothers	"Syphilitic Tragedies" in Infants, %				
4 ‡	47	76.6	58	36.2	109	38.5
4-7	49	48.9	57	21.0	104	10.5
8+	42	23.8	58	18.9	93	6.4

* See text of the present paper regarding accuracy of these time intervals.

† This group of women, infected less than two years, presumably contains both those with manifest lesions of early syphilis and others with asymptomatic latent syphilis.

‡ This treatment group, of "less than four doses of neoarsphenamine," presumably includes some patients (number not stated) who received no treatment during pregnancy.

TABLE 5.—*Probability of Syphilitic vs. Normal Infants After Varying Amounts of Treatment in Mothers with Early and Late (Usually Latent) Syphilis*

(Recalculated from Turner and McKelvey [9])

	Early Syphilis in Mother (71 Cases)		Late (Usually Latent) Syphilis in Mother (579 Cases)	
Treatment (in Terms of Gm. of Arsphenamine)	Infant Almost Certainly Normal, %	Infant Almost Certainly Syphilitic, %	Infant Almost Certainly Normal, %	Infant Almost Certainly Syphilitic, %
None	5	95	35	65
<2 Gm.	50	50	75	25
2-3 Gm.	70	30	90	10
3+ Gm.	95	5	98	2

To our knowledge Paley [10] is the only reporter of a large series of cases who may be excepted from these statements. This worker studied the outcome of pregnancy in 617 syphilitic women whom he subdivided into three groups on the basis of duration of infection in the mother, i. e. less than two years, two to five years, more than five years. He too omits any consideration of clinical manifestations in the mothers, and he does not provide information as to how he dated the infection in them. To determine accurately the duration of syphilitic infection in pregnant women is usually an impossible task, since most of them have no history of early lesions. It can be done only roughly and on the basis of the collateral evidence of age of the mother, the duration of her sexual activity and, in some cases, on data obtained from the father. Nevertheless, it is entirely probable that in Paley's group of women "infected less than two years" are included all those in his series with manifest lesions of early syphilis. Paley classifies the outcome in the infant in two groups, normal and "syphilitic tragedies." In the latter category he includes abortion, stillbirth and living children with syphilis. Subject to the comments made and to the accuracy of diagnosis of infantile congenital syphilis in 1937 (the date of his report), his data, summarized in table 4, indicated clearly the extreme hazard to the infant posed by recently acquired syphilis in the mother.

In order to document further the point that the outlook for the infant is worse if the mother has manifest early syphilis during pregnancy than in the later years of maternal infection, it is fortunate that the original work sheets of McKelvey and Turner [9] are still available. We have examined these records and have recalculated the infantile results on the basis in question. In the original series of McKelvey and Turner there were 650 syphilitic mothers to whom antisyphilitic treatment was administered for the first time during pregnancy. Seventy-one of these women had demonstrable early (primary or secondary) syphilis at the time; the remaining 579 were in later stages of the disease (usually latent). Included among these 579 are an undeterminable number with symptomless early infections; but this fact only lends greater significance to observable differences in the outcome in the infants of the two maternal groups.

During the period of the McKelvey-Turner study arsenical treatment administered to the mother was almost exclusively arsphenamine at weekly intervals in an average single dose of 0.3 Gm. The amount of treatment given may therefore be conveniently expressed in grams of this drug (i. e. 1 Gm. equals approximately three injections, 4 to 6 Gm. equals twelve to twenty injections, and so on). When more than 2 Gm. (six injections) of arsphenamine was given, a compound of heavy metal (mercury or bismuth) was usually employed as well. The total amount of arsphenamine given is a rough index to the duration of pregnancy at the start of treatment; i. e., the earlier treatment was begun, the more treatment the mother received before delivery, and vice versa. The same considerations as to treatment also apply to Paley's material.

Having these points in mind, the data of McKelvey and Turner have been recalculated and the results shown in percentage terms in table 5. The terms "almost certainly" normal or "syphilitic" respectively, as applied to the infant, have been purposely utilized because in some infants the evidence was presumptive rather than absolute and because the criteria of diagnosis of infantile congenital syphilis have undergone considerable modification since the publication of that paper (and of Paley's also). Nevertheless the figures presented are believed to be substantially accurate. No matter what amount of treatment was given to the mother, the results in the infant were substantially worse when the mother had early syphilis during pregnancy than when she had late or latent syphilis. In untreated early syphilis of the mother there was practically no chance of a normal infant unless the maternal infection had occurred within the last few days or weeks of pregnancy. In maternal latent syphilis (usually of several years' duration), on the other hand, 35 per cent of babies were normal and nonsyphilitic even in the absence of maternal treatment. These data are confirmatory of those of Paley but even more striking.

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[9] McKelvey, J. H., and Turner, T. B.: Syphilis and Pregnancy: Analysis of Outcome of Treatment in Relation to Treatment in 943 Cases, J. A. M. A. **102**: 503 (Feb. 17) 1934.

[10] Paley, S. S.: Syphilis in Pregnancy, N. Y. State J. Med. **37**: 555 (March 15) 1937.

These facts are justification for a judgment of penicillin based on its effects in early maternal infections.

It is also notable that with the older system of administering metal chemotherapy to the mother at weekly intervals (even with oxophenarsine hydrochloride twice or three times weekly, we think) during the available time (i. e., between the dates of diagnosis and delivery), the best results in the fetus are not obtained unless treatment is started early in pregnancy, before the fifth month, and continued throughout its course.

About 150 pregnant women with early syphilis have been reported in the literature as treated with intensive arsenotherapy (usually about 1,200 mg. of oxophenarsine hydrochloride by intravenous drip or multiple syringe injection in five to ten days). The majority of these are contained in the papers by Sadusk and Shaffer,[11] Rattner,[12] Speiser and his associates [13] and Neilson and his group.[14] It is impossible to determine accurately from the published statements the outcome in the infants of these women, but the best possible approximation is furnished in table 6, where it is indicated that about 15 per cent of the babies had syphilis in spite of this treatment.

TABLE 6.—*Probability of Syphilitic vs. Normal Infants After Intensive Arsenotherapy of Early Syphilis in the Mother During Pregnancy*

	Infants	
Cases Treated	Syphilis (%)	Normal (%)
150 (approximately)...............................	15	85

Tables 4, 5 and 6 should be read in comparison with the penicillin results presented in table 3. Penicillin is incomparably superior to metal chemotherapy, no matter how administered, in the prevention of prenatal syphilis. After penicillin treatment of 57 mothers with early syphilis there were no dead infants and only 1 living infant with congenital syphilis among 60 infants born, a failure rate of 1.6 per cent; and this one failure might have been prevented by appropriate penicillin retreatment of the mother. With penicillin the results are equally good no matter what the duration of pregnancy at the time of treatment. This contrasts with a failure rate of 5 to 50 or more per cent from metal chemotherapy, depending on the time in pregnancy of institution of such treatment and the amount administered.

The Results of Penicillin Treatment of Mothers with Latent (or Late) Syphilis.—Ingraham and his associates include in their paper the outcome of treatment of 23 patients with latent (19 early—less than four years' duration; 3 late—more than four years' duration) and 1 with congenital syphilis. Among these women were two abortions, one at the fourth, the other at the seventh month of pregnancy. There is no statement provided in the paper as to necropsy findings in either fetus.[15] The 21 children were born alive and all were apparently normal with no examples of congenital syphilis. In view of the data presented in tables 4 and 5 this is also an excellent result, though hardly as impressive as in early maternal syphilis.

RECOMMENDATIONS

The data so far presented should be considered in conjunction with the known dangers of arsenic and bismuth therapy, the known nearly complete lack of toxicity of penicillin for the mother and the compression of penicillin treatment within a minimum time period of a few days.

In view of these facts, we are prepared to recommend that, for the purpose of prevention of prenatal syphilis, metal chemotherapy for the syphilitic mother whether with early or late (including latent) syphilis be abandoned and that penicillin be adopted universally in its stead.

Since therapy for the fetus should be planned in conjunction with that for the mother herself, and since definitive information as to the optimum method of use of penicillin in early or late acquired syphilis of adults is not yet available, it is possible to recommend treatment plans at present only as preliminary information permits. Certain minimum requirements should be met:

1. The total dose of penicillin should be not less than 2.4 million units administered intramuscularly in aqueous or saline solution at intervals of not less than two nor more than three hours night and day.

2. The total duration of treatment should be not less than seven and one-half days.

3. For the present, and until definitive information is available from research centers, absorption-delaying methods of use of penicillin (i. e. as in peanut oil-beeswax) should not be used.

4. Following completion of penicillin treatment, the mother must be followed clinically and with quantitatively titered serologic tests at least as often as once a month until delivery (and preferably for the first year after treatment) and at appropriate intervals thereafter.

5. Retreatment with penicillin should be given during pregnancy to the mother if (*a*) there is evidence of clinical or serologic relapse or (*b*) the original maternal serologic titer does not significantly decline within three months after treatment.

6. The infant must be followed after birth for a minimum period of three months by means of (*a*) frequently repeated physical inspections, (*b*) quantitatively titered blood serologic tests, preferably every two weeks, and (*c*) roentgenograms of the long bones taken preferably at the first and sixth weeks of life.

7. There is no satisfactory evidence that abortion, actual or threatened, is more frequent during penicillin treatment of the mother than during other forms of antisyphilitic treatment, or indeed more frequent than the expected incidence of spontaneous abortion in normal women. Unless and until such evidence is forthcoming, speculation is useless as to whether the phenomenon is due to therapeutic shock or to the direct oxytocic action of penicillin.

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15. The autopsy of the child stillborn at the seventh month showed no definite evidence of syphilis. Grossly, syphilitic epiphysitis appeared probably to be present in the long bones, but this could not be confirmed histologically because of autolysis. There are no available pathologic data on the fetus aborted at the fourth month (Ingraham[4]).

On the basis of the data presented in this paper, we see no reason for unusual caution in initiating the penicillin treatment of syphilitic pregnant women.

8. It is not yet determined whether a woman with early syphilis, treated with penicillin while nonpregnant or during an earlier pregnancy, may be permitted to go through a subsequent pregnancy without treatment. Although 3 women in the present series have delivered normal children in a second pregnancy in which no treatment was given, further experience must accumulate before the point can be decided. Pending further information, a pregnant syphilitic woman previously treated with penicillin, and whether or not this earlier treatment was apparently successful as to the mother's infection, should be retreated with penicillin in each succeeding pregnancy.

SUMMARY

1. Fifty-seven pregnant women with early syphilis have been treated with penicillin in two university clinics. Sixty infants have been born to these women, all of whom were born alive; only 1 has developed clinical or laboratory evidence of congenital syphilis. In this 1 case, syphilis in the child might possibly have been prevented. The remaining 59 infants are all apparently normal, and 42 of these have been followed for a long enough time after birth to make practically certain of the diagnosis of "no syphilis."
2. These results in the prevention of prenatal syphilis are superior to any heretofore attainable with any method of treatment.
3. There is no satisfactory evidence that penicillin is directly or indirectly responsible for abortion.
4. It is recommended that in syphilitic pregnant women penicillin be used routinely for the prevention of prenatal syphilis, other methods of treatment being abandoned.

PENICILLIN TREATMENT OF THE SYPHILITIC INFANT

NORMAN R. INGRAHAM Jr., M.D.; JOHN H. STOKES, M.D.;
HERMAN BEERMAN, M.D.; JOHN W. LENTZ, M.D.;
PAUL GYÖRGY, M.D.,
and
ELIZABETH K. ROSE, M.D.
Philadelphia

This paper is a supplement to our observations on this same subject recorded about a year ago.[1] Our increasing experience still leads us to feel that sodium penicillin given by intramuscular injection is a satisfactory treatment for infantile congenital syphilis. Considerable progress has been made toward arriving at a satisfactory regimen for the infant infected with syphilis. There is no denying the fact, however, that this problem has seemed considerably more complex to work out than has been the treatment of early syphilis in the adult, with penicillin, largely because of the relative severity of the disease frequently encountered in the newborn in contradistinction to that found in the adult and because of the theoretical dangers inherent in the injudicious use of a rapidly spirillicidal drug under such circumstances. Even though this study is still in progress and much is yet to be learned in the application of penicillin treatment to the syphilitic infant, yet, as the material is accumulating, a conservative appraisal of our existing knowledge seems worth while.

MATERIAL

Thus far we have treated with penicillin 26 infants with early congenital syphilis. The average age of these infants at the time of commencement of therapy has been 3.6 months. Fourteen of the babies have been less than 3 months of age, 7 between 3 and 6 months, 2 between 6 months and 1 year and 3 more than 1 year. Twenty-three of the infants were Negroes, 3 were white, 11 were boys and 15 were girls.[2] None of them had previous treatment for syphilis. All of the infants had clinical evidence of their disease; in many instances dark field examination of surface lesions revealed Treponema pallidum; in almost every case roentgenographic evidence of osteochondritis and periostitis was demonstrable. Latent (symptomless) syphilis in infants was excluded from the study in order better to measure the response to treament by a variety of methods.

At the time of compilation of this material, 21 of the 26 infants are still living. These 21 infants have been followed for an average of 7.6 months after being given penicillin, maximum fifteen months. Four of the infants have been followed for more than one year, 10 for periods of six months to one year and 7 for periods of less than six months after penicillin.

TYPE OF TREATMENT GIVEN AND RESULTS OF THERAPY

It was the purpose of this study to determine what penicillin as such would accomplish in the cure of this disease rather than to find the ideal dosage. The latter will have to be worked out in larger series of cases observed over longer periods. At first we used the approximate equivalent dosage of 2.4 million units for a 150 pound (68 Kg.) adult or 16,000 units total dosage per pound of body weight. Later this dosage was considerably increased, so that of the total number of infants 11 received dosages of sodium penicillin roughly in amount of 16,000 units per pound of body weight; 3 received dosages significantly lower than this; 9 received single courses of therapy with dosages significantly greater than this, and 3 were retreated because of failure of clinical response.

Of the infants who reacted favorably to treatment the initial clinical response has been uniformly good. Symptoms and signs have improved or disappeared; roentgenographic findings, initially abnormal, have gradually regressed over periods of three to six months. The response of the blood serologic test in the group as a whole may be briefly summarized as follows:

Eleven of the 21 living infants have become seronegative in the period of observation. In 3 additional cases the blood serologic titer has regressed from relatively high values to less than 1 unit of syphilis reagin. In those cases which have responded the initial sustained fall in titer was noted on an average eighty-eight days after penicillin (17 cases). The average length of time to obtain sustained seronegativity (11 cases) was one hundred and sixty-eight days after penicillin, with a maximum of two hundred and fifty-seven days and a minimum of seventy-eight days before the first negative test was noted. This serologic response is roughly comparable to that described for the syphilitic

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Paper in a symposium on "The Penicillin Therapy of Syphilis" published under the auspices of the Section on Dermatology and Syphilology.

From the Institute for the Control of Syphilis and the Department of Pediatrics, University of Pennsylvania School of Medicine. The work described in this paper was done under a contract recommended by the Committee on Medical Research between the Office of Scientific Research and Development and the University of Pennsylvania.

[1] Lentz, J. W.; Ingraham, N. R., Jr.; Beerman, H., and Stokes, J. H.: Penicillin in the Prevention and Treatment of Congenital Syphilis, J. A. M. A. **126:** 408 (Oct. 14) 1944.

[2] The Philadelphia General Hospital supplied 14 of these patients, the Children's Hospital 7, the Pennsylvania Hospital 2, the Hospital of the University of Pennsylvania 2 and the St. Luke's and Children's Medical Center 1.

pregnant woman by the University of Pennsylvania group in another paper to be published and materially slower than that obtained in adults.[3] There is some definite reason to believe that this slow response, with occasional relapse and failure to respond at all in some instances, is the result of too low total dosage of the drug or of too short a course of penicillin, as the summary in the accompanying table indicates.

One half of the infants treated with dosages comparable to 2.4 million units in the adult were seropositive at the end of six months, but only 1 in 7 cases remained positive when larger dosage was used. It was the conclusion reached in the National Venereal Disease Control Conference in St. Louis in November 1944 that the dosages employed in infantile syphilis up to that time (16,000 to 32,000 Oxford unit total dosage per kilogram of body weight) were too low.[4] Our experience since that time would seem to indicate that very much larger dosage is desirable. The child (285) in the present series who became seronegative in the shortest time (seventy-eight days), a 5 week old Negro boy with symptoms of his infection and 128 units of syphilis reagin according to quantitative titered tests at the commencement of therapy, received a total dosage of 74,000 Oxford units per pound of body weight over a period of fifteen days. This is roughly four times the dosage recommended for trial at the St. Louis conference and the approximate equivalent of 11.1 million units total dose for the 150 pound adult. It will be recalled that infantile congenital syphilis is a much more severe and extensive infection than is encountered in early infection in the adult and that, provided safe systems of administration can be found, the anticipated effective dosage would be much greater in the congenitally infected infant than in acquired syphilis.

Since the cases summarized in table 2 of our previous report [1] we have had three additional deaths, bringing our total to five. None of these deaths could be attributed to penicillin. Two of them and possibly the third could be attributed to intercurrent infection in an infant in a debilitated state as a result of a severe systemic disease (syphilis).

Patient 286 was a 5 pound 10 ounce (2,550 Gm.) 4 week old Negro girl in almost moribund state at the time she was admitted to the hospital. There were 32 units of syphilis reagin in the blood to the quantitative titered Kline test and extensive osteochondritis and periostitis of the syphilitic type shown by the roentgenogram. The infant was given all possible supportive treatment and started on small doses of penicillin intramuscularly. She died after twelve hours, having received five injections of 350 Oxford units each of sodium penicillin. Autopsy revealed the immediate cause of death as an extensive bronchopneumonia. It would seem that in this infant penicillin probably had no part either favorable or unfavorable in the outcome. It will be recalled that congenital syphilis is often a fatal disease in utero and during the first few weeks of life. It is expecting too much for penicillin or any known mode of therapy to be successful in such a case. A trial of the most effective type of treatment is certainly indicated, however.

Patient 299 died of pneumonia three months after the completion of penicillin therapy. In this instance we were unable to obtain an autopsy. This infant with clinically manifest infantile congenital syphilis was a Negro boy 6 weeks old at the time of commencing treatment, Oct. 25, 1944. He received a total dosage of 61,540 Oxford units per pound of body weight in twelve days. His clinical response was good and his blood serologic test, which had been as high as 128 Kline titered units of reagin, dropped to 2 units by Jan. 17, 1945. The initially positive roentgenogram of the long bones showed healing. Infection with pneumonia followed immediately thereafter, and death occurred on January 30. There was nothing to indicate that death resulted either from syphilis or from its treament. There is every possibility, however, that syphilis was indirectly the cause of death, the initial debilitation of the child, from which he had never completely recovered, predisposing to intercurrent infection.

Patient 397 was a 3 month old Negro boy with bronchopneumonia superimposed on a severely debilitated state from congenital syphilis when he was treated with a total dosage of 224,664 Oxford units of sodium penicillin over a period of eleven days commencing Dec. 1, 1944. In spite of this treatment and expert general pediatric care at the Children's Hospital, the course was steadily downhill, and the infant finally died on December 28. Staphylococcus aureus had been cultured from the blood stream at the time of admission. There was an otitis media. Roentgenograms showed extensive syphilitic osteochondritis and periostitis, which was improving at the time of death. Blood serologic tests for syphilis were strongly positive throughout the period of observation. No autopsy was performed. This represents another case in which penicillin was unsuccessful in combating the complications and debilitation accompanying advanced infantile congenital syphilis.

Relationship of Serologic Response to Total Dosage in Infants with Congenital Syphilis Treated with Penicillin and Followed for at Least Six Months After the Completion of Therapy

Total Dosage of Penicillin	Serologic Response in Period of Observation	
	Positive	Negative
1. Less than 20,000 units per pound.....	4 cases	4 cases
2. More than 20,000 units per pound....	1 case	6 cases

Forty per cent of the infants treated with penicillin developed symptoms of severe gastrointestinal disturbance in addition to temperature reaction. This consisted in abdominal distention, loss of appetite, varying degrees of diarrhea and in some instances vomiting. Gastrointestinal disturbances as a result of the toxemia of congenital syphilis are well known.[5] In some of the infants these symptoms were manifest at the time of admission but almost uniformly were much accentuated within forty-eight to seventy-two hours after the commencement of treatment. They had a tendency to regress and to disappear as the treatment was completed.

There has been much discussion since the publication of our last report among the pediatricians and the syphilologists of the university penicillin group concerning the importance and significance of the Herxheimer reaction to penicillin. Recently 7 infants whose physical condition at the commencement of therapy was good have been given full dosage from the start instead of the previously recommended reduced dosage. All of these have done well. The question of careful judgment arises therefore, largely with regard to the infant who is already in a debilitated state when he is brought to medical care. In such instances expert pediatric attention is of paramount importance.[5a]

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SUMMARY OF THE PRESENT STATUS OF OUR KNOWLEDGE IN THE TREATMENT OF THE SYPHILITIC INFANT WITH PENICILLIN

The appropriate total dosage and time dose relationship in the treatment of infantile congenital syphilis has still not been determined, but there is little doubt that penicillin exercises a favorable influence in the treatment of early congenital syphilis. It would seem that, in general, the dosages of penicillin used for infantile congenital syphilis have been too low and that they should be greatly increased, possibly considerably in excess of 20,000 Oxford units of sodium penicillin per pound of body weight, total dosage. There is also the impression with the material at present available that the treatment course should be prolonged to ten or fifteen days rather than limited to seven or eight days as in the past. This is in line with the recently published work of McDermott and his co-workers,[6] which indicates that the important factor in the treatment of syphilis with penicillin is not high dosage but prolonged action at low concentration. It is also apparently unnecessary to reduce the initial dosage of penicillin. In greatly debilitated children treatment should be approached with considerable caution and with maximum supportive general pediatric care. With sodium penicillin the drug should be administered intramuscularly every three hours for the duration of the treatment.

Of those infants in the present series which have been followed for periods of longer than six months after treatment with penicillin 10 (71 per cent) have remained clinically normal and are seronegative; 4 are clinically normal but have remained seropositive. This percentage success does not nearly approach that which is being obtained thus far in early acquired syphilis in the adult and serves only further to emphasize the fact that much study is still required. The cases which have remained seropositive or which have relapsed have been retreated with dosages of penicillin in excess of 20,000 Oxford units per pound of body weight. We have not used other modes of chemotherapy for syphilis in conjunction with penicillin.

CONCLUSIONS

Since this study is still in progress, any conclusions which may at present be drawn must be subject to modification as additional information is collected. The following statement, however, does represent our present working knowledge in the field of penicillin treatment of the syphilitic infant:

1. Initial attempts at the treatment of infantile syphilis with penicillin have borrowed their dosage and length of therapy from experience with the disease in the adult and have given a degree of success of about 70 per cent. A higher percentage of favorable results is to be hoped for as better time dose relationships are worked out.

2. Some evidence is presented to indicate that the total dosage of sodium penicillin by intramuscular injection should be greatly increased for infants. It is also suggested that prolongation of treatment up to two weeks is desirable.

3. The range of total dosage employed for infants treated in this series has been from 11,000 Oxford units per pound to 74,000 Oxford units per pound of body weight given over a period of from seven to fifteen days. The larger total doses with the longer periods of treatment have given the better results.

[5a] The pediatric aspects of management will be discussed in more detail in a subsequent communication.

[6] McDermott, W.; Benoit, M., and Du Bois, R.: Time Dose Relationships of Penicillin Therapy: III. Regimens Used in Early Syphilis, Am. J. Syph., Gonor. & Ven. Dis. 29: 345 (May) 1945.

TREATMENT OF EARLY SYPHILIS WITH PENICILLIN

ARTHUR G. SCHOCH, M.D.,
and
LEE J. ALEXANDER, M.D.
Dallas, Texas

Penicillin, properly administered, will cure the majority of patients with primary and secondary syphilis! We base this statement on personal observation of over 900 patients with early syphilis and on intimate knowledge of results obtained by other investigators.

Even the most skeptical now are willing to admit the effectiveness of the sodium salts of penicillin injected intramuscularly, usually at a three hour interval day and night, over a period of from seven to ten days. Adequate dosage will produce a percentage of cures in cases of early syphilis (primary and secondary) as good and probably better than chemotherapy.

We do not wish to leave the impression that an optimum dosage schedule has been developed. Investigators concerned with this particular subject are still striving toward that goal.

However, it is reasonable to suppose that sometime during the next five years such an optimal schedule of treatment for early syphilis will be found. It may be 5 million units of penicillin in seven and one-half days; it may be a combination of penicillin with arsenic and/or bismuth. It may be delayed absorption penicillin (our immediate problem) suspended in peanut oil-beeswax mixture, or it may be the administration of the penicillin orally. Nevertheless it probably will be penicillin, unless a new antibiotic makes its appearance that is more effective against the spirochete of syphilis than the penicillin of today.

Certainly the curability of syphilis depends on (1) total dosage, (2) injection interval, (3) duration of treatment days and (4) the addition of other antisyphilitic drugs.

A discussion of oral penicillin in the treatment of syphilis is too experimental to deserve consideration in this paper.

Let us therefore look at what is known of the effect of sodium penicillin injected intramuscularly, using a modification (20,000 units of penicillin every three hours for seven and one-half days, total 1.2 million units) of Mahoney's original schedule (25,000 units every four hours for eight days, total 1.2 million units) at one extreme and, at the other extreme, the newer penicillin preparations under investigation at present, namely delayed absorption preparations.

Paper in a symposium on "The Penicillin Therapy of Syphilis" published under the auspices of the Section on Dermatology and Syphilology.

From the Department of Dermatology and Syphilology, Southwestern Medical College, and the Dallas Syphilis and Venereal Disease Clinic, Parkland Hospital.

The work described in this paper was done under a contract, recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and the Southwestern Medical Foundation.

We know now that a total dose of 300,000 units in seven and one-half days is frankly inadequate; likewise, a total dose of 600,000 units. Although probably effective, 1.2 million units still leaves an appreciable number of failures; therefore we feel that one is justified in using 2.4 million units of penicillin as the dosage of choice. This total dosage was adopted by the Army and Navy. (All schedules utilize intramuscular injections every three hours for seven and one-half days.)

We have used injection intervals of three hours, four hours, six hours and twelve hours. All except the three hour interval proved inadequate.

With regard to the time required in the treatment of early syphilis, we believe that, with a given dosage, cutting the time in half from seven and one-half days to a little under four days is inadequate therapy. Little is known about schedules requiring fifteen days instead of seven and one-half days. We predict, however, that a fifteen day schedule probably will not be significantly superior to a seven and one-half day schedule, the individual dose remaining constant. From a practical standpoint it seems illogical to treat patients fifteen days in order to gain a slight advantage. Why not be satisfied with a schedule of treatment that yields approximately 90 per cent "cures," carefully follow these patients through the critical period of relapse and reinfection, namely the first twelve months following treatment, and individualize the treatment of the failure group?

We believe, therefore, that the use of 2.4 million units of penicillin in seven and one-half days (40,000 units intramuscularly every three hours) is definitely justified but question whether doubling either the total dose and/or the total time is advisable.

Are we, in addition, justified in adding a chemotherapeutic agent to a course of penicillin, such as oxophenarsine hydrochloride, bismuth or both? We think the answer is definitely "yes."

Throughout the years most patients with early syphilis have been more successfully treated when more than one drug was utilized. Recent experience has indicated that the addition of oxophenarsine hydrochloride or bismuth salicylate to a course of penicillin probably cures more patients with early syphilis than if that dose of penicillin had been used alone.

Evan Thomas at Bellevue Hospital in New York treated several hundred patients with 1.2 million units of penicillin and, in addition, gave 40 mg. of oxophenarsine hydrochloride intravenously daily for eight consecutive days during the time the penicillin was administered. We have treated several hundred patients with the same penicillin schedule with the addition of five intramuscular injections of bismuth salicylate, giving 0.2 Gm. of bismuth salicylate in oil the first, third, fifth, seventh and ninth days.

These two systems of treatment are comparable but, naturally, are too young to evaluate. However, certain impressions and certain preliminary statistical observations are definite to him and to us. Even in a limited period of observation, namely a little more than a year, the percentage of failures in Thomas's group and in ours is perceptibly less than when patients were treated with penicillin alone, with comparable periods of follow-up observation.

It might be argued that the addition of oxophenarsine hydrochloride in Thomas's series, and bismuth in our series, merely delayed or postponed the appearance of failures in the form of relapse or reinfection. It probably would have no influence on the incidence of reinfection, but we must freely admit that a system of treatment which combines penicillin with arsenic, or penicillin with bismuth, might conceivably delay by a number of months the incidence of relapse lesions in the given patient or in any group of patients. Hypothetically, this should be more true of patients treated with combined penicillin and bismuth than with patients treated with penicillin and arsenic. Preliminary observations, however, are most encouraging. Therefore it would seem wise to add a reasonable amount of oxophenarsine hydrochloride, bismuth salicylate in oil or both to any penicillin regimen for the treatment of early syphilis.

Which, then, should we add to the "standard" Army and Navy treatment schedule of 2.4 million units of penicillin given in a seven and one-half day period, oxophenarsine hydrochloride or bismuth or both?

At present, from a practical standpoint, the answer seems obvious. Add the safest form of chemotherapy, bismuth, and exclude the most dangerous, arsenic.

We shall not consider the experimental work now in progress combining the use of intramuscular penicillin with fever therapy. Even if this combination were provocative of an optimum "cure rate," it could not be recommended for routine mass treatment of early syphilis, for obvious reasons.

The much argued question of what constitutes relapse and what constitutes reinfection has been clearly and concisely summarized in an editorial by Moore in the July 1945 issue of the *American Journal of Syphilis, Gonorrhea and Venereal Diseases.* Since the advent of all rapid methods of treatment of syphilis, beginning with the five day intravenous drip until the present day, syphilologic conservatism has relegated reinfection into the category of relapse in evaluating all newer methods of treatment. The present coordinated study being carried out under the direction of the Penicillin Panel of the Subcommittee on Venereal Diseases of the Committee on Medical Research is no exception. It has been admitted by some (J. E. M.) that reinfection occurs now many times more frequently than formerly and that systems of treatment that are completed in a week or ten days result in reinfection between husband and wife by virtue of the nature of the disease and aptly labeled "ping pong syphilis" by William E. Graham. If reinfections occur at an appreciable rate, then it seems perfectly obvious that the irreducible minimum of failures is slightly greater than the reinfection rate.

We have observed reinfections in numerous cases of conjugal syphilis. In several such instances by treating both the infected spouse and the exposed partner at the same time we have apparently prevented further reinfection in these couples.

The uniform response of chemotherapeutic treatment resistant syphilis to penicillin, as recently reported by Russell Nelson and others; the conspicuousness, by its absence, of penicillin resistant primary and secondary syphilis in many thousands of patients treated with penicillin; the lack of experimental or clinical evidence of a penicillin resistant strain of Treponema pallidum are, to say the least, unusual for a syphilotherapeutic remedy.

SUMMARY

The foregoing observations bring us squarely before the all important question In view of what is known today, how should early syphilis (primary and secondary) be treated?

1. The minimum dosage should be at least 2.4 million units of penicillin; the total time required should be a minimum of *seven and one-half days; the interval*

between individual intramuscular injections should be a maximum of three hours, day and night.

2. In addition to penicillin treatment the patients should receive either oxophenarsine hydrochloride intravenously, 40 mg. daily for 8 doses, or five injections, 0.2 Gm. each, of bismuth salicylate in oil on alternate days, or both. We ourselves prefer the addition of bismuth alone to the penicillin treatment schedule in order to obviate completely the possibility of arsenic reactions inevitable in a large series of cases when oxophenarsine hydrochloride is used even in small amounts.

3. A regular and thorough follow-up of all treated patients for a minimum of five years is essential to proper management. The follow-up must include adequate quantitative serologic determinations and adequate spinal fluid examinations.

4. The management of the occasional penicillin failure should be individualized and expertly planned.

5. We strongly urge that intimate contacts of the patients be treated coincidentally with the treatment of the patient, to avoid reinfection.

PENICILLIN IN THE TREATMENT OF NEUROSYPHILIS

PAUL A. O'LEARY, M.D.
LOUIS A. BRUNSTING, M.D.
and
ORVILLE OCKULY, M.D.
Fellow in Dermatology and Syphilology, Mayo Foundation
Rochester, Minn.

Our experience with the clinical application of penicillin in the treatment of neurosyphilis is now in the early part of its third year. During this time certain impressions have been gathered which indicate the trend of the results of treatment. However, the period of observation is still too short to justify any attempt to make conclusive deductions as to the merit of penicillin in the treatment of neurosyphilitic patients. In fact it is well not to draw conclusions as to the success or failure of any method of treating neurosyphilis until a minimum of three years and preferably five years has elapsed since the treatment was started. Accordingly, this report is a brief summary of the observations on 100 patients who had neurosyphilis and who were treated by various systems in which penicillin was employed during the past two years.

The reports in the literature are at variance as to the value of penicillin in the treatment of neurosyphilis. Gammon and his associates[1] expressed the opinion that it was of value and noted especially the influence on the reactions of the cerebrospinal fluid. They expressed the belief that larger doses (4,800,000 units) than had been used might offer better results. Rose[2] reported that penicillin is an active therapeutic agent in cases of neurosyphilis but that further observation was necessary to determine its real value. Thrasher[3] reported that penicillin given by the Swift-Ellis technic produced clinical improvement in most of the cases, with serologic changes following later. Rose and his associates[4] also reported observation of a group of patients who had neurosyphilis and who were given penicillin with fever therapy. They could find no striking difference at this period of these patients from patients treated by the older methods. Neymann and his associates[5] expressed the opinion that the results following penicillin therapy among patients who had dementia paralytica were unsatisfactory. All of the reports appearing in the literature are thus far colored with varying degrees of conservatism, and all emphasize the fact that a longer period of treatment and observation is necessary before conclusive deductions can be made.

It is generally agreed, as originally observed by Barksdale and Thompson,[6] that meningeal neurosyphilis responds satisfactorily, both clinically and serologically, to penicillin therapy. In fact, the single outstanding effect of the remedy among our patients seems to be the reversal of the reactions of the cerebrospinal fluid, especially the reduction of the lymphocytic cell count; the higher the degree of pleocytosis at the time when treatment is started, the more rapid and striking is the reduction of the number of cells. The other factors in the reaction of the cerebrospinal fluid also decrease but in less degree in the following order of frequency: protein, colloidal gold curve and serologic reactions. In the majority of our cases, although the cell count, protein and gold curve reactions returned to within normal limits, the serologic reactions of the cerebrospinal fluid tended to remain persistently positive. The significance of this often inactive, but nonetheless positive, reaction warrants further observation before it is interpreted as indicative of an impending highly successful therapeutic effect. From the clinical standpoint the most pronounced therapeutic effect that we have observed has been a gain of weight following a course of penicillin. One patient who had tabes dorsalis gained 50 pounds (22.7 Kg.) in four months following treatment, while a gain of 20 to 30 pounds (9.1 to 13.6 Kg.) was fairly common in other cases. The average gain of weight of patients who had various types of neurosyphilis was 10 pounds (4.5 Kg.). A reduction of "leg pains" occurred in 15 per cent of the cases in which this complication of tabes dorsalis was present and a "general improvement," consisting of somatic changes for the better, was noted in about a third of the cases.

The other clinical manifestations, such as ataxia, crises (gastric and rectal), incontinence, irritability, nervousness, dysarthria and changed personality, were not helped when penicillin was given alone.

We have given penicillin by intramuscular, intravenous and intraspinal routes to patients who had neurosyphilis. We have administered it while the patients were undergoing, and after they had undergone, malarial therapy and hyperthermy. The dose has varied from 1,200,000 to 8,000,000 units in a period of seven to ten days. The periods of observation range from September 1943 to October 1945 and, of the 100 patients treated, follow-up data, which form the basis of this report, are available on 70.

From the Section on Dermatology and Syphilology, Mayo Clinic.

Paper in a symposium on "The Penicillin Therapy of Syphilis" published under the auspices of the Section on Dermatology and Syphilology.

The work on this paper was done under a contract recommended by the Committee on Medical Research of the Office of Scientific Research and Development and the Mayo Clinic.

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In September 1943, when we first used penicillin in the treatment of syphilis following the suggestions of Mahoney, Arnold and Harris,[7] the drug was difficult to obtain because of its limited production. Accordingly, we gave it intravenously because it had been demonstrated by Herrell[8] that, when given by this route to patients who had infectious diseases, much smaller amounts of the drug could be given with equally satisfactory results. The intravenous administration of penicillin by the continuous drip method produced technical difficulties with complications such as phlebitis that made this mode of administration cumbersome. In comparing the patients treated two years ago by the intravenous technic with those who were treated by the intramuscular technic, the results are in favor of the former. The outstanding serologic result of the entire group of patients occurred in a young man who had early asymptomatic neurosyphilis and who was given 1,200,000 units of penicillin intravenously in seven days and three spinal drainages. The grade 3 type of spinal fluid noted when treatment was started became completely negative within six months thereafter. Similar but less conspicuous results were encountered in 3 other cases in which this procedure was employed; however, at this time, although the intravenous method of giving penicillin may show a slight superiority to the intramuscular technic, the complications and technical difficulties of the former procedure offset its slightly better results.

The attempt to recover penicillin in the cerebrospinal fluid following its intravenous or intramuscular injection was an interesting part of our early experience. If doses up to 100,000 units were given in twenty-four hours, we were able to recover penicillin in the cerebrospinal fluid in varying amounts, but it is now known that when large doses, such as several million units, are given intramuscularly in a period of twenty-four hours, it is possible to recover penicillin in the cerebrospinal fluid in correspondingly large amounts. Even though we were able to recover penicillin in the cerebrospinal fluid following administration of comparatively small doses, it was thought advisable to employ also spinal drainage and intraspinal therapy. Five patients were given 55,000 units intraspinally by means of the Swift-Ellis technic. As previously noted, the most complete and most rapid serologic reversals occurred in the cases in which spinal drainage or intraspinal therapy was used in conjunction with the intramuscular use of penicillin.

The next procedure that we employed in this appraisal program was the combined use of fever therapy and penicillin. As it was easy to demonstrate that penicillin was ineffectual against Plasmodium vivax, patients undergoing malarial therapy were given at first 1,200,000 units of penicillin intramuscularly during ten days of the fever course. The dose was eventually increased up to a total of 8,000,000 units given intramuscularly at the rate of 50,000 units every three hours. Fifty-six patients, of whom 19 were tabetic, 25 were paretic and 12 had asymptomatic neurosyphilis, received the combination of penicillin and fever therapy.

We find it difficult to distinguish the results of the combined use of penicillin and fever therapy from those of fever therapy alone. In other words, it seems that, when penicillin was given during or after the fever course, there was no appreciable improvement of the clinical or serologic changes over those who received only the fever treatment. Of the neurosyphilitic patients who had tabetic and paretic forms of the disease and who received penicillin alone, the clinical therapeutic effects were essentially negligible when compared with those for a similar group given malarial therapy. Accordingly, the addition of penicillin to a fever course either by malarial inoculation or by the fever cabinet has added but little to the betterment of the patients.

The clinical improvement that was noted by some patients following penicillin therapy was of a vague type, which can be summarized by the general statement of the patient "I feel better." On attempting to analyze this, it was not possible to elicit any constant changes in the group as a whole, although gain of weight and slight decrease of pains in the legs were the outstanding results. The crisp type of improvement that occurs following malarial therapy was not observed in the group who received only penicillin. Increasing the dose to 8,000,000 units did not increase the degree of improvement, nor has the administration of three courses of penicillin of 2,400,000 units each, given at two month intervals, been of additional help in this regard. We have been impressed with the fact that improvement following administration of penicillin comes within two or three months after treatment, while improvement following malarial therapy may not be fully manifested for two or three years thereafter. Of the patients who had a high cell count in their cerebrospinal fluids, clinical improvement did not parallel the serologic improvement. No benefit was noted from use of penicillin alone among patients who had gastric crises, incontinence or ataxia, although 1 patient who had diplopia was improved. One tabetic patient who had been serologically negative for fifteen years and had severe pains in the legs became disoriented toward the end of the course of penicillin and died three months later without regaining his mental equilibrium.

In cases of early dementia paralytica in which penicillin alone was given, no appreciable clinical improvement was noted. The irritability, nervousness and forgetfulness were not significantly altered. However, in cases in which malarial therapy and penicillin were administered, the results were comparable to those of the malarially treated group. Our experience was equally unimpressive among the institutionalized paretic patients who had the advanced forms of the disease.

Patients who had the meningovascular types of neurosyphilis and 2 patients who had amyotrophic lateral sclerosis and positive serologic reactions of the blood and cerebrospinal fluid derived no benefit from 2,400,000 units of penicillin alone.

We have already mentioned the serologic changes noted in these cases. The return of the cell count, protein and colloidal gold curve to within normal limits is observed constantly, but it is not accompanied in the majority of cases by a corresponding degree of clinical improvement. This divergence of the clinical and serologic results warrants further observation and study. Perhaps in three or four years it may permit of more favorable interpretation than we can make of it at this time.

The serologic reactions of the blood likewise show a tendency to reduction of both the complement fixation and the titer but, as noted in the studies of the cerebrospinal fluid, the reversals to negative or weak positive and the reduction of the titer are not paralleled by similar clinical improvement.

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[7] Mahoney, J. F.; Arnold, R. C., and Harris, Ad: Penicillin Treatment of Early Syphilis: A Preliminary Report, Ven. Dis. Inform. 24: 355-357 (Dec.) 1943.

[8] Herrell, W. E.: Penicillin and Other Antibiotic Agents, Philadelphia, W. B. Saunders Company, 1945.

SUMMARY

The preliminary impressions gained in the past two years by treating 100 patients who had various types of neurosyphilis with different methods in which penicillin was employed are summarized as follows:

1. The outstanding result common to most of the patients in this series following the use of penicillin was a return of the cell count, protein and gold curve to within normal limits in the studies of the cerebrospinal fluid with reduction of the strength of the complement fixation and titer reactions of the blood.
2. The outstanding clinical effects as noted among patients who had objective and subjective signs of neurosyphilis were a gain of weight and a reduction of severity and frequency of the pains in the legs. The early symptoms of dementia paralytica were not influenced.
3. The patients who had meningeal neurosyphilis were most responsive both clinically and serologically, while patients who had the parenchymatous forms of the disease were helped only slightly if at all.
4. The outstanding serologic results noted were among the patients who had asymptomatic neurosyphilis and who received penicillin intravenously in doses approximating 1,200,000 units in a week, in association with either three spinal drainages or intraspinal treatments (Swift-Ellis type).
5. Penicillin given in combination with fever therapy, either malarial or by means of the fever machine, did not improve the clinical results noted from fever treatment alone.
6. The administration of penicillin by the intravenous, intramuscular or intraspinal route, alone or in combination with fever therapy, both malarial and by machine, leads us to believe that penicillin alone is not capable of controlling the parenchymatous forms of neurosyphilis. However, in cases of the meningeal forms of the disease and in those in which there was a high degree of pleocytosis in association with asymptomatic neurosyphilis, the results thus far are encouraging.
7. In occasional cases of neurosyphilis penicillin therapy produces clinical and serologic results that are outstanding. However, these favorable results are noted in only a few cases and often appear when least expected. It is not possible at this time to account for such great therapeutic discrepancies.

Physician's Obligation to Overweight Patients.—The patient who comes to the physician for reduction of weight must be *convinced* that (*a*) his obesity is due to eating more food than he requires, and (*b*) the only way *that* he can return to normal is by the slow, steady, difficult road of a proper diet. The patient should understand the danger of drugs for this condition and the futility of other methods of treatment. He should be told of the hazards of obesity, and *perhaps an appeal* may be made to his vanity or to his pride of his stamina and ability to manifest self control. It must be explained that the results will be achieved slowly and *will not* be spectacular. A diet list should be prepared which is as varied and enjoyable as possible, which furnishes bulk and ample vitamin requirements, and which has a caloric value of approximately 1,000 to 1,200 calories *daily*.—Smillie, Wilson G.: Preventive Medicine and Public Health, New York, Macmillan Company, *1946*.

THROMBOCYTOPENIC PURPURA IN PREGNANCY AND IN THE NEWBORN

WILLIAM B. PATTERSON, M.D.
Puunene, Maui, Hawaii

According to Polowe,[1] who reviewed the literature in 1944, 62 cases of pregnancy complicated by thrombocytopenic purpura have been reported. Most of the patients had no evidence of purpura before pregnancy, but at varying times during pregnancy acute hemorrhagic purpura developed with bleeding from all the mucous membranes and into the skin. The mortality was about 55 per cent for the mothers and was slightly higher for the infants. The maternal mortality was usually due to uterine bleeding following delivery, which was often premature. Some of the infants are reported to have died of hemorrhage and part of these were known to have had thrombocytopenia. That congenital thrombocytopenic purpura[2] may occur is suggested by the numerous cases reported in which both the mother and the infant have been affected. However, not all of the infants have been affected, and it may be that the tendency for thrombocytopenia is inherited. The patient who is the subject of this report is known to have had chronic purpura and thrombocytopenia since the age of 4. She became pregnant against medical advice but went through pregnancy normally except for postpartum hemorrhage, which was not too difficult to control. She had a healthy baby except that it has thrombocytopenia. Because of the danger of this complication of pregnancy, it was thought that this case should be recorded in detail so that thrombocytopenia might be suspected in patients who bleed after delivery from unknown cause.

REPORT OF CASE

History.—Mrs. C. M., aged 22, primigravida, referred to me in her fifth month of pregnancy by Dr. S. R. Wallis of Lihue, Kauai, T. H., is of Irish-German descent. Her maternal great-grandmother and grandmother were "bleeders." Her own mother, who bruises easily, had a severe postpartum hemorrhage requiring transfusion following her birth. A platelet count taken on Sept. 10, 1945 on her mother was 160,000 and the bleeding time was 3½ minutes. The patient has no sisters but has one brother who has shown no tendency to bleed.

At the age of 4 the patient fell and bruised her hip, and a large hematoma formed. Investigation revealed that she had a prolonged bleeding time and thrombocytopenia. Since that time she has always had purpuric spots on her body, which have usually formed where she bumps herself but sometimes they have formed without trauma. Her bleeding time has usually been much prolonged. During her childhood she had frequent nosebleeds, which occasionally required packing to control. She has had spontaneous bleeding from her gums at times, and tooth sockets have had to be packed after extractions. She first menstruated at 13 years of age and thereafter her menses came every twenty-eight days and lasted from seven to nine days. The flow was profuse for the first six days and was enough to saturate nine vulvar pads in twenty-four hours. At 19 years of age her menses were excessive and she became very anemic. At that time she consulted Dr. Ernestine Hamre, hematologist of Honolulu, T. H., who reported that the hemoglobin was 6 Gm., the blood platelets numbered 62,000 and the clot retraction was very poor in twenty-four hours. The hemoglobin returned to normal rapidly on treatment with ferrous sulfate.

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[1] Polowe, David: Splenectomy in Pregnancy Complicated by Thrombocytopenic Purpura Hemorrhagica, J. A. M. A. **124**: 771 (March 18) 1944.

[2] Sanford, H. N.; Leslie, E. I., and Crane, M. M.: Congenital Thrombocytopenia, Am. J. Dis. Child. **51**: 1114 (May) 1936.

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The first day of her last menstrual period was Sept. 11, 1944 and the expected day of delivery was June 18, 1945. She reported to me on Feb. 16, 1945. Physical examination was negative except for bruised spots on her legs and arms and showed a normal pregnancy of five months duration. The spleen was not palpable. The clotting time was 4½ minutes and the bleeding time was 8½ minutes. Her blood was type A and was Rh positive. The blood pressure and urine were normal and the blood Wassermann reaction was negative. She was given 3 grains (0.2 Gm.) of ferrous sulfate at mealtimes, 1 mg. of vitamin K daily and one polyvitamin capsule daily. She was put on a balanced diet including milk and iodized salt. The bleeding time was checked after one week and had dropped to 4 minutes, and after two weeks it had dropped to 2 minutes. Arrangements were made with two type A blood donors to give blood for transfusion in case of an emergency. The patient was warned to report any abnormal signs or symptoms immediately. She progressed normally except for a nosebleed lasting three minutes on April 14. She continued to get new purpuric spots wherever she bruised herself.

Normal labor began on June 12, which was six days before the expected date of delivery. After ten hours of labor, when the fetal head was fully engaged and the cervix was almost fully dilated, the patient was given 4½ grains (0.3 Gm.) of seconal and 90 cc. of rectal ether in oil. Thirty minutes after receiving this medication she was totally amnesic and quiet and did not require any further anesthesia. After twelve hours of normal labor the baby was delivered by low forceps, no episiotomy being necessary. A smooth solid blade obstetric forceps was used. The placenta complete with the membranes delivered spontaneously by the Duncan mechanism three minutes after the baby was born, and about 300 cc. of blood was lost at the time. After delivery of the placenta inspection revealed no tears of the cervix, vaginal walls, labia or perineum. There was no bleeding from the uterine cavity, and the vaginal mucosa appeared normal. Ergonovine maleate 1/320 grain (0.2 mg.) was given intramuscularly immediately after delivery of the placenta.

Fifteen minutes following delivery of the placenta a very slight amount of vaginal bleeding was noted, though the uterine fundus was very firm. Another dose of ergonovine maleate was given and the patient was put to bed. For the next hour the vaginal bleeding continued, though there was never more than a very slight flow of blood. Three vulvar pads became almost saturated in one hour. At this time the pulse rate was 120 per minute and the patient had become pale. The systolic blood pressure was 110 mm. of mercury. She was taken back to the delivery room, and the blood donors were called. The vagina was found to be filled with a large, firm blood clot which was attached to the vaginal walls. In removing the clot it was seen to extend through a ragged opening in the left vaginal wall and to be continuous with a clot in the tissue. The opening in the vaginal wall was at the exact location at which the left blade of the obstetric forceps had come in contact with the tissue, and it extended to the labia minora. It was not present at the time of inspection immediately following delivery of the placenta. There was very slight bleeding from the uterine cavity, but a steady stream of blood came from the rent in the vaginal wall. The tear in the vaginal wall was repaired with three sutures. The uterine cavity and the vagina were packed with 4 yards of heavy 3 inch gauze and the patient was given 1/6 grain (0.01 Gm.) of morphine sulfate. An intravenous infusion of 1,000 cc. of 5 per cent glucose in isotonic solution of sodium chloride was started and was followed by 500 cc. of citrated blood. When this treatment was completed after four hours the pulse had slowed down to 100 and was of good quality. The patient was awake and reacted normally for a patient who had had rectal ether eight hours previously.

The vaginal and uterine packs were left in for thirty-six hours, during which time there was slight bleeding through the packs. When the packs were removed there was still some bleeding, so the vagina was repacked. A blood count taken at this time showed 56 per cent hemoglobin with 2.5 million red blood cells. Another 500 cc. of citrated blood was given. The second vaginal pack was removed twenty-four hours after insertion, and thereafter there was only a normal amount of lochia. A blood platelet count made five days after delivery was 60,000, and a specimen of blood taken at this time showed no clot retraction in twenty-four hours. Ten days after delivery the platelet count was 34,640, the hemoglobin was 82 per cent, the red blood cell count was 4.3 million and the bleeding time was ½ minute.

During the puerperium the patient received 1/320 grain of ergonovine maleate every eight hours for three days and 3 mg. of vitamin K daily for eighteen days. She was able to nurse the baby normally. Her temperature did not go higher than 100 F. Vaginal examination on the eleventh postpartum day when the patient was discharged revealed that the involution of the pelvic organs was progressing normally. The tear in the vaginal wall had healed. Eighteen days after delivery the bleeding time was 6 minutes, and twenty-five days after delivery it was 3½ minutes. Thirty-seven days after delivery the bleeding time was 2 minutes, and the platelet count was *36,300.* Seventy-five days post partum the bleeding time was ¼ minute, and the platelet count was 90,000. The patient had vaginal discharge similar to menstrual flow from the twenty-eighth day after delivery until the forty-second day and from the seventy-seventh day until the eighty-third day.

Description of the Infant.—The baby was a normal boy and weighed 7 pounds 14½ ounces (3,586 Gm.) at birth. His spleen was not palpable. There was a faint mark on the right cheek where the forceps blade had pressed. He was offered his mother's breast and 2 ounces of sterile water every four hours. Sixty hours after birth it was noted that the forceps mark which had almost disappeared had suddenly become dark blue. Also there was one purpuric spot on his right forearm. The tourniquet test for petechiae was negative and there was no blood in the stool. He was given 2 mg. of vitamin K intramuscularly. Seventy-two hours after birth there were both streaks of blood and liquid blood mixed with the normal stool. A blood count revealed 118 per cent hemoglobin, 6.2 million red blood cells and 18,570 blood platelets. The coagulation time was 5 minutes, the bleeding time was 4 minutes and the blood was type A. He was given 50 cc. of pooled human plasma intravenously immediately and 30 cc. after twelve hours. Each succeeding stool contained less blood, so that there was none after thirty-six hours and the purpuric lesions gradually faded. On the tenth day after birth the platelet count was 28,800 and the bleeding time was ½ minute. He gained rapidly on breast milk and weighed 8 pounds (3,630 Gm.) on the eleventh day of life when he was discharged with his mother. On the thirty-seventh day of life the bleeding time was 1 minute and the platelet count was 20,820. On the seventy-fifth day of life the bleeding time was only ½ minute and the platelet count had risen to 175,000. He had had no purpuric spots since leaving the hospital and was developing normally.

COMMENT

To recognize and to diagnose thrombocytopenic purpura in pregnancy before an acute attack and before delivery, it is necessary to keep this complication in mind and to suspect it in all patients who have shown any abnormal bleeding tendency either before or during pregnancy. Patients who have had frequent nosebleeds or who bruise easily may have thrombocytopenia. Patients who have close relatives that are "bleeders" should be suspected. Patients who have had postpartum hemorrhage at a previous delivery should be suspected. Although in thrombocytopenic purpura the bleeding time and the platelet count may at times be normal, the bleeding time is usually prolonged and the platelet count is usually subnormal. The clotting time is normal, but clot retraction is very poor or absent in twenty-four hours. In the acute stage the tourniquet test is positive for petechiae.

The treatment of choice in acute hemorrhagic purpura is multiple small transfusions, preferably direct. Transfusions of about 200 cc. of blood should be given as often as is necessary, though at times larger transfusions [illegible] have to be given as a life saving procedure.

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Some patients will continue to bleed after repeated transfusions, and in these splenectomy will usually be followed by an abrupt cessation of bleeding. However, splenectomy should be resorted to only as a life saving procedure and after conservative treatment has failed. Although there is usually an immediate improvement after splenectomy, time has demonstrated that this may be only temporary and that the patient may again develop acute hemorrhagic purpura. Splenectomy seems to be of most benefit for patients who have splenomegaly.

The development of late toxemia in a patient with thrombocytopenic purpura is a more serious complication than it is in a patient who is otherwise normal. The placentas of patients with late toxemia usually contain many infarcts, and these are often associated with a small amount of bleeding at the time of formation. It seems only logical to suppose that if the toxemic patient also has thrombocytopenia the bleeding that occurs at the time of placental infarction may continue and may lead to placental separation and to massive intrauterine hemorrhage.

Every pregnant patient who either has purpura or has a tendency to bleed should be hospitalized at the onset of labor. In the past almost all deaths of such patients have been caused by bleeding following delivery. Few of these patients bleed profusely at the time of delivery, but practically all of them bleed slowly and continuously for several hours or days following delivery. Owing to the abnormal clot formation the uterine sinuses continue to bleed although the uterine muscle is firmly contracted. The trauma produced by the fetus passing through the vagina is enough to cause bleeding beneath the vaginal mucosa of patients with thrombocytopenia. Enough bleeding may occur to produce a hematoma, which may rupture into the vagina and continue to bleed.

Patients who are known to have thrombocytopenia should have the uterine cavity and the vagina packed firmly with gauze immediately after delivery of the placenta. The pack should be left in for twenty-four to thirty-six hours. If vaginal bleeding recurs, the vagina should be inspected to see if the blood is coming from the uterus or from the vaginal walls. Then the uterus or the vagina or both should be repacked, depending on where the blood is coming from. Episiotomy is to be avoided on patients with thrombocytopenia unless absolutely necessary. To do an episiotomy on such a patient is to open another avenue of bleeding which may be very difficult to control.

All infants born alive to mothers with thrombocytopenia should be blood typed immediately, and the bleeding time and a blood platelet count should be made. The treatment of hemorrhagic purpura in newborn infants is the same as in any one else, namely, repeated small transfusions. The purpura and the bloody stools were observed in the infant of this report before there was any appreciable loss of blood, so pooled human plasma was given instead of blood. Although the infant in this case lost only 6 per cent of his body weight by the time the mother's milk was plentiful, he developed purpuric lesions and bloody stools after three days of starvation. He had the forceps bruise on his face from birth, but it did not become purpuric until the third day. As soon as he received an adequate amount of breast milk the bleeding stopped and has not recurred. It is very probable that the milk helped as much as the plasma.

After studying the subject of thrombocytopenia and pregnancy, one is forced to the conclusion that pregnancy is far too dangerous an undertaking for a woman who has chronic thrombocytopenic purpura. If a patient has an attack of acute thrombocytopenic purpura and recovers completely, as shown by a normal platelet count, normal bleeding time and normal clot retraction, pregnancy would not seem to be too great a risk. If pregnancy in a heretofore normal person is complicated by an acute attack of thrombocytopenic purpura, there seems to be little to gain by terminating pregnancy.

Clinical Notes, Suggestions and New Instruments

PRIVINE DEPENDENCE OF TWO YEARS' DURATION

LAWRENCE E. PUTNAM, M.D.
and
ROBERT P. HERWICK, Ph.D., M.D.
Washington, D. C.

Privine hydrochloride, a brand of naphazoline, was first described by Hild[1] in April 1941 as a preparation to reduce swelling of the nasal mucosa. Hild stated that "one important advantage of privine, compared with epinephrine, lies in the fact that it causes no reactive hyperemia and that it has only a relatively slight toxicity, if any." The drug appeared on the American market in October 1942. According to Fabricant and Van Alyea[2] "the 0.1 per cent solution of privine hydrochloride is a nontoxic nasal vasoconstrictor which has given satisfactory use in rhinologic practice." In August 1944 Gollom[3] reported persistent nasal congestion in more than 30 cases following the use of privine. Feinberg and Friedlaender[4] later reported over 75 cases in which symptoms of nasal congestion were aggravated or prolonged by the continued use of privine. The following case may be of the longest duration which has yet been noted:

Mrs. B. E., aged 35, a housewife, was seen on Oct. 31, 1945 complaining of nasal obstruction of two years' duration. In 1934 and 1937 she had had some treatment for sinus trouble. In December 1943 she noticed nasal congestion and tried several home remedies which did not seem to work very well. She then saw a nose and throat specialist, who recommended privine. This seemed to give her remarkable relief, but this lasted only about three to four hours each time and she continued to use the product every three to four hours for a total of 1 ounce weekly. A short time later the patient saw another physician, who recommended the use of different nose drops, but these gave poor relief so she reverted to the use of privine. In July 1945, after seven months of continuous use of this preparation, she returned to a city on the West Coast, where she saw her family doctor. He irrigated her sinuses with mild protein silver and prescribed thyroid without relief of the nasal congestion. In September 1945 she saw a nose and throat specialist, who said there was no sign of infection in her sinuses at that time, merely swelling of the mucous membranes.

She continued to use privine until she was seen in October 1945. Physical examination was essentially negative except for some tenderness of both frontal sinuses and both antrums. The mucous membranes of the nose were somewhat pale, but there was no congestion (the patient had had her usual dose of privine about two hours previously).

From the Food and Drug [illegible] Federal Security Agency.

[1] Hild, A. M.: Privine Ci[illegible] Reducing Congestion of the Nasal Mucosa, [illegible] 71: 557-561 (April 26) 1941.

[2] Fabricant, N. D., and Van Alyea, O. E.: A Note on the Evaluation of Privine HCl as a Nasal Vasoconstrictor, Am. J. M. Sc. 205: 122-125 (Jan.) 1943.

[3] Gollom, J: The Problem of Nasal Medication, with Particular Reference to Privine Hydrochloride 0.1 Per Cent, Canad. M. A. J. 51: 123-126 (Aug.) 1944.

[4] Feinberg, S. M., and Friedlaender, Sidney: Nasal Congestion from Frequent Use of Privine Hydrochloride, J. A. M. A. 128: 1695 [illegible] (Aug. 11) 1945.

Since it was felt that the original cause of the patient's nasal congestion had long since disappeared and that the present difficulty was due to the compensatory reaction following nasal decongestion, it was recommended that she discontinue privine completely To prevent any possible headache or other symptoms due to withdrawal of the drug, she was given a supply of ephedrine capsules, 3/8 grain (0 024 Gm) each, for use during the day and ephedrine with a barbiturate for use in the evening or at night The patient was quite apprehensive about discontinuing the privine, since she had depended on it so completely for the past twenty three months However, she agreed to stop it and to use acetylsalicylic acid liberally if any headache developed On arising the following morning her nose was somewhat blocked and she took one capsule of ephedrine That night she took one of the ephedrine-barbiturate capsules because of some nasal congestion and a fear that she would not be able to sleep The following day, after she had entered a smoky room, her nose became congested again and she took a second ephedrine capsule without any noticeable benefit She obtained relief by leaving the room For the next four nights she took one of the ephedrine-barbiturate capsules before going to bed She then discontinued all medication and until the present (three months later) has had to use none at all The nasal mucous membrane at this time appears essentially normal

SUMMARY

1 A case of privine dependence of twenty three months' duration was observed

2 Privine and other potent nasal decongestants are valuable when used properly

3 To avoid dependence on these drugs they should be discontinued as soon as the immediate need for them disappears

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TREATMENT OF UREMIA AFTER ACUTE RENAL FAILURE BY PERITONEAL IRRIGATION

HOWARD A FRANK, M D, ARNOLD M SELIGMAN, M D
and
JACOB FINE, M D
Boston

Uremia resulting from acute renal damage is frequently fatal, because the renal lesion requires more time for healing than the lethal effects of the uremia will permit Such potentially reversible renal lesions include those resulting from incompatible transfusions, sulfonamide toxicity massive trauma, suppression of kidney function following surgical trauma to the urinary tract, toxemia of pregnancy mercury poisoning and certain forms of acute glomerulonephritis

Available methods do not provide for sufficient excretion of retained substances by extrarenal pathways Clearance of the circulating blood through an artificial dialyzing membrane is one of the recent methods advocated[1] But the technical difficulties involved, the need of adequate heparinization and the additional vascular load such a method imposes are serious handicaps to the acceptance of this method

The use of the peritoneum as a dialyzing membrane for extrarenal excretion is not new Efforts to utilize this structure to treat uremia have been made in animals and in a few instances in man but without success

In a preliminary study[3] we observed that a properly performed peritoneal irrigation can remove crystalloids from the blood with an efficiency adequate to substitute for renal function and to sustain life for many days The fluid for irrigation is designed to avoid depleting the plasma of its electrolytes and glucose and to combat acidosis[4] It is mammalian Tyrode's solution to which is added penicillin for bacteriostasis of susceptible organisms, heparin to inhibit fibrin deposition in the peritoneal cavity and additional glucose The technic developed and the experimental findings are described in detail elsewhere[3] Briefly, it consists in the introduction of an inlet and outlet tube into the peritoneal cavity through incisions under local anesthesia The sterile solution, prepared in large volume (20 to 35 liters per day), is run in by gravity at a controlled rate for maximum urea clearance of the blood and drained from the peritoneal cavity as fast as it enters the outlet tube The outlet tube is a stainless steel sump drain[5] attached to a continuous suction system to draw out fluid as rapidly as it collects

We report herewith a successful application of peritoneal irrigation to a patient who was expected to succumb to uremia following parenchymatous injury to the kidneys from sulfathiazole administration

REPORT OF CASE[6]

H Y, a man aged 51, entered the hospital complaining of headache, nausea, vomiting, diarrhea, a skin rash and oliguria of five days' duration Following a transurethral prostatectomy and resection of a bladder diverticulum one year earlier he had contracted asymptomatic pyuria, which persisted intermittently thereafter Sulfadiazine therapy had been given postoperatively but not thereafter Three weeks before the present admission he developed a painful tender swelling in the right groin, diagnosed as an inflammation of the vas deferens, for which 4 Gm of sulfathiazole daily was prescribed This dose was taken daily for fourteen days prior to hospital entry Five days before admission oliguria was first noted, and for three days before admission he was virtually anuric (30 cc output per day)

On admission the patient was semistuporous A maculopapular rash was present on the trunk and extremities The abdomen was distended with fluid The rectal temperature was 102 8 F, deep respirations were 25 to 30 per minute the pulse rate was 114 per minute, the blood pressure 136/86, the red blood cell count 4 6 million, hemoglobin 13 6 per hundred cubic centimeters, the white blood cell count 9,900 (70 per cent polymorphonuclear cells, 26 per cent lymphocytes) A chest film showed probable bronchopneumonia of the left lower lobe

Penicillin 25,000 units was given every three hours The temperature became normal by the third hospital day and remained so thereafter

During the first four hospital days the daily urine output was 30 cc, 200 cc, 0 cc and 0 cc respectively Oral fluid was supplemented with intravenous 5 per cent glucose in water until the daily intake ranged from 5 to 7 liters per day Increased ascites and generalized edema developed

On the third hospital day cystoscopy revealed edema and inflammation of the bladder mucosa Ureteral catheterization disclosed no obstruction of the ureters The renal pelves were empty and no crystals were found The urologist (Dr E G Crabtree) considered the situation due to parenchymatous injury from sulfathiazole and the outlook grave

On the fifth hospital day the patient's condition was critical He was delirious and stuporous, distended and acidotic and had generalized and pulmonary edema The blood nonprotein nitrogen was 185 mg per hundred cubic centimeters, the blood urea nitrogen 126 mg per hundred cubic centimeters and the plasma carbon dioxide combining capacity 23 volumes per cent The patient was referred to us for treatment

Peritoneal irrigation was instituted A mushroom catheter was inserted on one side, and a sump drain on the other side of the peritoneal cavity Considerable ascitic fluid with a urea content of 92 mg per hundred cubic centimeters was aspirated

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From the Surgical Research Department Beth Israel Hospital and the Department of Surgery Harvard Medical School

The work described in this paper was done under a contract recommended by the Committee on Medical Research between the Office of Scientific Research and Development and Harvard University

[1] Kolff, W J and Berk H T J The Artificial Kidney A Dialyser with a Great Area Acta med Scandinav **117** 121 1944

[2] Ganter G Ueber die Beseitigung giftiger Stoffe aus dem Blute durch Dialyse Munchen med Wchnschr **70** 1478 1923 Rosenak, S and Siwon P Experimentelle Untersuchungen ueber die peritoneale Ausscheidung harnpflichtiger Substanzen aus dem Blute Mitt a d Grenzgeb d Med u Chir **39** 391 1926 von Jeny A Kann das Bauchfell bei Uramie die Rolle eines natuerlichen Dialysators uebernehmen? Ztschr f klin Med **122** 294, 1932 Balazs J and Rosenak S Zur Behandlung der Sublimatanurie durch peritoneale Dialyse, Wien klin Wchnschr **47** 851 1934

[3] Seligman A M Frank H A and Fine Jacob Treatment of Experimental Uremia by Means of Peritoneal Irrigation J Clin Investigation to be published

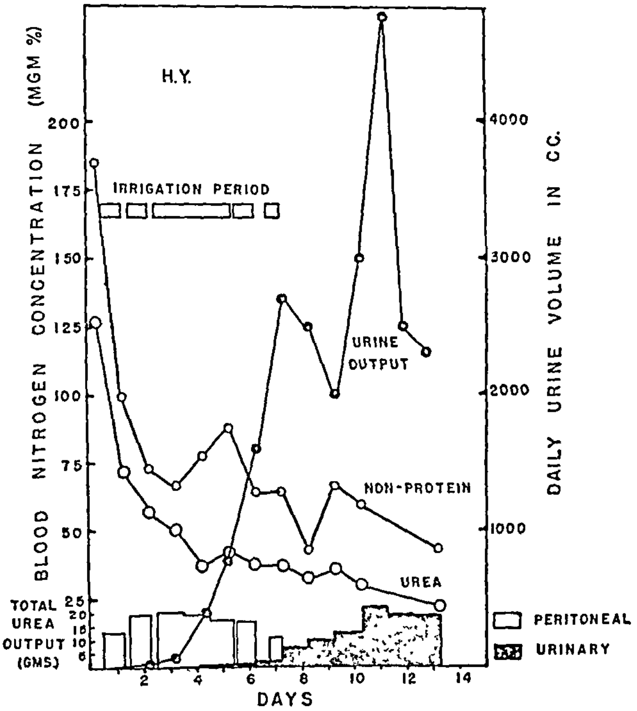
[4] Since water soluble vitamins may be removed by peritoneal irrigation they are given parenterally in large dosage

[5] Babcock W W Spreading Peritonitis Its Prevention and Treatment, Pennsylvania M J **43** 1093 1940 Burnett W J Rosemond, G P and Caswell H T The Use of the 'Sump Drain in Peritoneal Infection Surg Clin North America December 1944, p 1316

[6] *Dr Louis Kraner referred this patient to us for treatment*

The peritoneal irrigation was conducted without difficulty and produced no discomfort. All outflow fluid was collected.

The accompanying chart shows for each day the changes in blood level of nonprotein and urea nitrogen, the volume of urine excreted and the total amount of urea present in the peritoneal drainage fluid and in the urine. The table shows the concentrations of urea in urine and in peritoneal drainage fluid, together with the calculated urea clearances. Blood sodium chloride remained high (660 mg. per hundred cubic centimeters).



Changes observed each day.

On the fourth day of irrigation after fourteen days of oliguria or anuria the urine volume increased to 400 cc. Thereafter the volume excreted increased steadily. The specific gravity of the urine remained low (1.005 to 1.010) throughout the period of observation, but the urea concentration in the urine, which at first was no higher than that of the plasma, steadily rose until it reached 400 mg. per hundred cubic centimeters on the day of discharge from the hospital. Urinary urea clearance values improved steadily but remained well below normal values up to the time of discharge.

On admission the small amounts of urine excreted were alkaline in spite of the patient's acidosis. When diuresis started, the urine became acid. The urine on admission showed the Friedlaender bacillus and many white cells. Throughout the period of observation the urine contained small to moderate amounts of albumin and white cells but no red cells, casts or crystals.

Clinical improvement, except for the aggravation of symptoms of ileus on the third day, paralleled that of the clinical chemistry. Acidosis persisted, probably on a starvation basis. Therefore 400 Gm. of glucose was added to the irrigation fluid on the fourth day of irrigation, and by the fifth day the carbon dioxide combining capacity had risen to 40 volumes per cent.

Since the patient had received large volumes of fluid before irrigation was started and was edematous as a result, intravenous fluid therapy during the first two days of irrigation was cut to 2,000 to 3,000 cc. of 10 per cent glucose in water daily, to provide additional carbohydrate. It was felt that the patient could dispose of the excess interstitial fluid and the intravenous fluid through the peritoneal pathway. But when the slight degree of pulmonary edema previously present increased on the third day of irrigation, all intravenous therapy was stopped for the subsequent forty-eight hours. Thereafter, when the evidence of pulmonary edema had disappeared, glucose and amino acids were supplied intravenously as required.

At about the same time (the third day of irrigation) polymorphonuclear cells and colon and paracolon bacilli appeared in the peritoneal drainage fluid. This plus the increase in the signs and symptoms of ileus suggested the onset of peritonitis. Miller-Abbott tube therapy was started. After drainage through the Miller-Abbott tube of some 3,000 cc. of fluid daily for two days, edema decreased. Penicillin administration and peritoneal irrigation were continued. The patient showed mental depression but no clinical evidence of sepsis; he remained afebrile with a normal pulse and a normal total and differential white blood cell count. Edema disappeared by the fifth day of irrigation, and the patient was much improved except for mental depression, recurring intestinal distention and intolerance to food by mouth. As the volume and quality of urine improved, the irrigation was performed intermittently and was discontinued entirely seven days after it was started. The following morning the nonprotein nitrogen was 43 mg. per hundred cubic centimeters and the blood urea nitrogen 33 mg. per hundred cubic centimeters. The irrigation tubes were removed without discomfort. Mild wound sepsis was present, but the wounds healed rapidly.

Because the organisms growing in the peritoneal fluid were not susceptible to penicillin, streptomycin[7] (which was found to be effective in vitro in a concentration of 500 units per cubic centimeter against the organisms involved[8]) was injected into the peritoneal cavity (1 million units in 1 liter of saline solution) the day after termination of the irrigation and again on the subsequent day. There was no unfavorable reaction to this procedure.

It is not possible to evaluate the effect of streptomycin because there was no evidence of peritonitis aside from the presence of leukocytes and bacteria in the drainage fluid, and ileus. However, the patient's mental depression and ileus cleared considerably thereafter. General improvement continued, the Miller-Abbott tube was removed and the patient was able to take a full diet and 3,000 to 5,000 cc. of fluid orally per day. The specific gravity of the urine remained low, 1.008 to 1.012. The patient was up and about, normal mentally and feeling well, although he showed a moderate anemia (red blood count 3.6 million, hemoglobin 70 per cent). He was discharged from the hospital a week after peritoneal irrigation was stopped.

At the time of discharge renal function, in terms of urea clearance, was about one third of normal and was improving

Concentrations of Urea and Calculated Urea Clearances

	Peritoneal Fluid			Urine			
Day *	Flow Rate, Cc./Min.	Urea N Conc., Mg. per 100 Cc.	Blood Urea Clearance,† Cc./Min.	Flow Rate, Cc./Min.	Urea N Conc., Mg. per 100 Cc.	Blood Urea Clearance,† Cc./Min.	Blood, Urea N Conc., Mg. per 100 Cc.
1	25	24.4	8.4	....	....	....	72.7
2	33	27.4	14.5	0.021	85.0	0.029	62.2
3	25	28.1	13.8	0.041	66.0	0.053	50.6
4	25	26.0	17.2	0.280	75.0	0.55	57.8
5	13	31.2	9.5	0.550	50.0	0.65	42.8
6	35	21.0	19.4	1.10	62.5	1.82	37.8
7	29	20.5	21.0	1.87	32.5	1.65	36.7
8	..	....	....	1.74	145.0	7.69	33.3
9	..	....	....	1.40	255.0	9.70	30.8
10	..	....	....	2.30	193.0	14.80	30.0
11	..	....	....	3.30	225.0	21.70	
12	..	....	....	1.74	370.0	26.00	
13	..	....		1.60	392.0	28.50	22.0

* Days from start of peritoneal irrigation; correspond with days indicated in the chart.

† Clearance (C) calculated from equation (Moller, McIntosh and Van Slyke: J. Clin. Investigation 6:427, 1928) $C = \frac{UV}{B}$, where V equals the rate of flow (cc. per min.) of peritoneal fluid or urine, U equals the urea nitrogen concentration (mg. per hundred cubic centimeters) of peritoneal fluid or urine, and B equals the urea nitrogen concentration (mg. per hundred cubic centimeters) of blood. The value of B at the end of each collection period of urine or peritoneal fluid was used in the calculation.

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[7] Dr. D. F. Robertson of Merck & Co. supplied the streptomycin.

[8] Dr. Fritz Schweinburg performed this test.

daily. It was adequate to maintain normal blood levels of nitrogenous substances and to prevent acidosis. The phenolsulfonphthalein excretion test showed 20 per cent excretion in one and three-fourths hours, i. e. about one third of the normal value. Four weeks later the renal urea clearance was greater than half of normal and the phenolsulfonphthalein excretion was normal.

COMMENT

Peritoneal irrigation in this patient corrected uremia and provided an adequate substitute for renal function until recovery of renal function occurred. Clinical improvement followed closely the progressive improvement in blood chemistry. We cannot state with finality that the patient would have died without peritoneal irrigation. In any case the incidence of recovery from acute renal failure will doubtless be increased by any method that eliminates the uremic state and its serious complications early.

The chart and table demonstrate the progressive recovery of renal function which began fourteen days after kidney shutdown and the fourth day after peritoneal irrigation was started. The volume output became normal shortly after diuresis began, but the recovery of concentrating function was slower. At the time the patient was discharged, urea clearance and phenolsulfonphthalein excretion were only some 30 per cent of normal. This, however, was adequate to keep the blood urea and nonprotein nitrogen levels within normal limits. Further improvement in renal function occurred in the following four weeks. Sufficient time has not elapsed to determine the full extent of return of renal function.

The speed with which peritoneal irrigation lowers the blood level of retained excretory products depends on the amount stored in extravascular compartments and will vary with the body weight and degree of edema. It also depends on the rate of flow of the irrigating fluid. Data obtained from other patients [9] show that the flow rate is optimal between 40 and 60 cc. per minute. At this rate 15 to 20 Gm. of urea can be removed in twenty-four hours, which is equivalent to the average rate of urea production on a normal diet and considerably exceeds that on a low protein diet. The efficiency of peritoneal irrigation does not diminish with time.

In the treatment of this patient the peritoneal drainage flow rate averaged 25 cc. per minute and the daily urea output varied from 12 to 20 Gm. per day. The blood urea clearance by peritoneal irrigation averaged 14.8 cc. of blood per minute and was as high as 21 cc. per minute. This was sufficient to correct the uremic state. An average peritoneal irrigation urea clearance value of 15 cc. per minute ordinarily should be an adequate renal substitute, because not more than 10 per cent of the average normal "maximum" renal urea clearance value (75 cc. per minute) is necessary to prevent the accumulation of excretory products.[10] Hence peritoneal irrigation may be discontinued when a patient of average size, on a normal or less than normal protein intake, is free of uremia and the recovery of renal urea clearance of the blood equals or exceeds 7.5 cc. per minute.

The primary hazard in and the only important limitation to the use of peritoneal irrigation is the danger of peritonitis. Peritonitis probably did develop in the case reported, for gram-negative organisms and leukocytes were found in the peritoneal drainage fluid, and the ileus already present seemed to grow worse. However, no other evidence of peritonitis was present.

The possible sources of peritoneal contamination by organisms are several: (1) errors in preparation of sterile fluid and apparatus, (2) contamination while shifting attachments to refilled carboys and (3) possible entry of organisms from the skin along the tube tracts or from room air through the sump drain. The first two errors can be largely counteracted by the use of bacterial filters in the delivery circuit. A thick gauze dressing is used as an air filter over the sump. As a further precaution antibacterial chemotherapy is used by giving penicillin intramuscularly as well as in the irrigating fluids for gram-positive organisms and streptomycin for gram-negative organisms. Improperly prepared solutions may be irritating to the intestinal serosa and thereby might facilitate the migration of bacteria from the intestine into the peritoneal cavity; properly prepared solutions seem not to impair the integrity of the peritoneum. Considering the gravity of the problem faced in uremia, the hazard of peritonitis should not discourage the use of the method if all precautions are taken.

The implantation of the tubes constitutes a minimal surgical trauma, which can be performed with virtually no risk in any phase of the patient's illness. Patients in uremia commonly have ileus or other gastrointestinal disturbances. Whether the irrigation process adds to these symptoms is not certain, but the symptoms are manageable by the usually available technics.

The free exchange of water and electrolytes between the plasma and the peritoneal fluid largely eliminates the need of routine intravenous fluid therapy. It is unlikely that unrestricted water administration speeds the recovery of kidney function. If caution is not exercised in the parenteral administration of fluids during the oliguric phase, especially if acidosis is present, lethal pulmonary edema may be produced. Unless the patient can take food orally, however, supplementary glucose, amino acids and vitamins should be given parenterally.

CONCLUSION

Peritoneal irrigation, by the technic herein described, eliminated uremia following acute renal failure from parenchymatous injury caused by sulfathiazole. Recovery of sufficient renal function to prevent the recurrence of uremia took place.

330 Brookline Avenue.

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[9] The Treatment of Acute Renal Failure by Peritoneal Irrigation, to be published. Ann. Surg.

[10] Van Slyke, D D.; Stillman, E.; Moeller, E.; Ehrlich, W.; McIntosh, J. F.; Leiter, L.; MacKay, E. M.; Hannon, R. R.; Moore, N. S., and Johnston, C.: Observations on the Courses of Different Types of Bright's Disease and on the Resultant Changes in Renal Anatomy, Medicine **9**: 257, 1930.

Council on Foods and Nutrition

ACCEPTED FOODS

The following additional foods have been accepted as conforming to the Rules of the Council on Foods and Nutrition of the American Medical Association for admission to Accepted Foods.

James R. Wilson, M.D., *Secretary.*

PREPARATIONS USED IN THE FEEDING OF INFANTS (*See* Accepted Foods, 1939, p. 156)

H. J. Heinz Company, Pittsburgh.

Heinz Pre-Cooked Cereal Food contains toasted oat flakes, yellow corn meal, toasted wheat, durum middlings, nonfat milk solids, brown sugar, defatted wheat germ, brewers' yeast, defatted corn germ, dicalcium phosphate, calcium carbonate, fine dairy salt, sodium ferric pyrophosphate, nicotinic acid, thiamine hydrochloride and riboflavin.

Analysis (submitted by manufacturer).—Total solids 93.79%, total sugar as sucrose 9.72%, protein (N × 6.25) 14.74%, fat (by acid hydrolysis) 3.75%, crude fiber 1.59%, ash 4.90%, salt 1.15%, total carbohydrates other than crude fiber, by difference 68.81%, calcium 713 mg. per hundred grams, phosphorus 657 mg. per hundred grams, iron 38 mg. per hundred grams, copper 0.8 mg. per hundred grams.

Calories.—3.68 per gram, 104 per ounce.

Vitamins.—Thiamine .... 1.22 mg. per 100 grams
Riboflavin .... 0.88 mg. per 100 grams
Niacin .... 22.50 mg. per 100 grams

H. J. Heinz Company, Pittsburgh.

Heinz Strained Apple Prune Pudding contains rice (Blue Rose), 50 per cent cream, cornstarch, nonfat milk solids, sugar, whole eggs, salt, vanilla concentrate tenfold, ground apples, dried prunes, lemon juice and water.

Analysis (submitted by manufacturer).—Total solids 29.66%, total sugar as sucrose 17.30%, acidity as citric 0.08%, protein (N × 6.25) 1.53%, fat (by acid hydrolysis) 1.42%, crude fiber 0.28%, ash 0.73%, salt 0.37%, total carbohydrates other than crude fiber, by difference 25.62%, calcium 40 mg. per hundred grams, phosphorus 39 mg. per hundred grams, iron 0.25 mg. per hundred grams, copper 0.11 mg. per hundred grams, lead 0.06 mg. per hundred grams, arsenic 0.007 mg. per hundred grams.

Calories.—1.21 per gram, 34 per ounce.

Vitamins.—Carotene ....128 I. U. per 100 grams
Thiamine .... 0.019 mg. per 100 grams
Riboflavin .... 0.071 mg. per 100 grams
Ascorbic acid .... 1.38 mg. per 100 grams

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SATURDAY, MARCH 16, 1946

SUDDEN DEATH IN STATUS LYMPHATICUS

The British investigators Greenwood and Woods[1] characterize status lymphaticus as "this heap of rubbish," stating furthermore that "the present use in certification and in evidence in coroners' courts of the phrase Status Lymphaticus and Status Thymic Lymphaticus is . . . a good example of the growth of medical mythology. A nucleus of truth is buried beneath a pile of intellectual rubbish, conjecture, bad observations, rash generalization." The British commission headed by Young and Turnbull[2] was unable to locate in status lymphaticus even a "nucleus of truth" and concluded that no such condition exists. Elsewhere status lymphaticus is regarded as a clinically recognizable entity consisting of "a combination of hereditary constitutional anomalies, entering into which are certain peculiarities of configuration, with preservation or even hyperplasia of the thymus at an age when involution is to be expected, hyperplasia of the lymphoid cells in the spleen, intestine and elsewhere, changes in the distribution of hair, hypoplasia of the vascular system, developmental deficiencies in the genitalia and, incidentally, visceral defects of uncertain occurrence and irregular distribution."[3]

In children suddenly dead with the physical attributes of status lymphaticus the lymphoid tissues in various parts of the body show myriads of necroses in the cells of the germinal follicles. These changes are believed to result in the release of sensitizing nucleoproteins. After the expiration of the anaphylactic incubation period the lymph nodes, according to this theory, are again subjected to the action of destructive substances which now serve to bring about further disintegration of nuclei, thus providing the requisite quantity of specific proteins to complete the anaphylactic cycle and to bring about sudden death.[3] Another theory of sudden death in subjects of status lymphaticus involves pressure effects. At Bellevue Hospital, where for a good many years status lymphaticus has been a subject of systematic study not only by the hospital pathologists but by medical examiners engaged in the investigation of sudden death, the anatomic signs of tracheal compression and of death from suffocation, although sought, have never been found. In the Bellevue necropsy experience the heaviest thymus encountered in status lymphaticus weighed 115 Gm., whereas the weight necessary for compressing the trachea, as shown by the experiments of Tamassia, is at least 180 Gm.

Carr[4] of the San Francisco Coroner's Office has described a series of 7 cases of status lymphaticus in which he believes that death was due to asphyxia following tracheal obstruction and displacement of the heart and lungs by the enlarged thymus gland. Perhaps the mere existence of the anatomic composite of status lymphaticus does not always satisfactorily explain the cause of sudden death.

If, as suggested by the British commission, status lymphaticus should be withdrawn from further consideration, it would exclude an apparently important antecedent of sudden death and, to this extent, progress would cease.

THERAPY OF FILARIASIS BANCROFTI

In a report on the medicinal treatment of filariasis bancrofti, Temkin[1] stresses the protean character of the earliest symptoms of filariasis and the difficulty of diagnosis, particularly in the differentiation from pseudofilariasis. Attacks of lymphedema, lymphadenitis and lymphangitis of one form or another constitute the early symptoms of filariasis in the Pacific. The recognition of the existence of "primary elephantiasis" suggests that the absence of early symptoms is no guaranty against a development of this complication. However, elephantiasis, even in native populations constantly exposed to infection, is relatively limited in incidence. Immunologic tests have not reached the stage where they could unequivocally decide the diagnosis of filiarasis. Therefore the efficacy of any drug must be judged by its effect on the disease as a whole. The bacterial theory of the disease, which denies the primary importance of filariasis, is not supported by experience from the application of sulfonamide drugs. Most authors do not regard either secondary infection or microfilariae as essential in the pathogenesis of the disease. Attention centers around the adult parasite and the body reaction to filarial infection itself. O'Connor believes that the acute inflammatory attacks represent an allergic or anaphylactic reaction, whereas elephantiasis is due to mechanical obstruction caused directly or indirectly by the worms or embryos. This theory presupposes the existence of hyperfilariation and the death and disintegration of large numbers of parasites at different times. O'Connor argues that antimony and arsenicals administered intravenously are ineffective because the parasites are not in the blood stream and, if degenerating, are largely cut off from circulation. The symptoms of early filariasis are partly allergic and partly due to inflammatory reactions caused by the adult worm. It is not possible to tell whether dead or living worms are preponderantly responsible for the pathologic changes.

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[1] Greenwood, Major, and Woods, H. M.: "Status Thymicolymphaticus" Considered in the Light of Recent Work on the Thymus, J. Hyg. **26:** 305 (Aug.) 1927.

[2] Young, M., and *Turnbull, H. M.:* Analysis of Data Collected by Status Lymphaticus Investigation Committee, J. Path. & Bact. **34:** 213 (March) 1931.

[3] Symmers, Douglas: Status Lymphaticus, Am. J. Surg. **26:** 7 (Oct.) 1934.

[4] Carr, J. L.: *Status Thymolymphaticus, J. Pediat.* **27:** 1 (July) *1945.*

[1] Temkin, Owsei: A Report on the Medicinal *Treatment of Filariasis* Bancrofti, National Research Council, Washington, D. C., September 1945.

Filariasis has a relatively good prognosis if reinfection is prevented and the patient is put under favorable clinical, physical and psychologic conditions. A majority of investigators aimed at the destruction of the living adult worms. The effectiveness of the drugs was tested on parasites in vitro, on related filarial infection in animals, on clinical symptoms and on microfilariae in the blood of man. Animal experiments were made on naturally occurring infections in dogs with Dirofilaria immitis and on Florida cotton rats infected with Litomosoides carinii. Culbertson and Rose obtained rather encouraging results with neostam and neostibosan in animal experiments. The adult worms appeared more susceptible to the action of these drugs than were the microfilariae. The latter disappeared gradually in the course of the treatment, but the adult worms were usually dead two weeks from the beginning of the treatment. In 1940 patients with filariae were given fuadin, anthiomaline, antimony, neoarsphenamine, acetylarsan, espundal, arsant, emetine, sulfanilamide, 4:4-diaminodiphenyl-sulphone, glucoside by Hawking. No filaricidal action could be demonstrated, judging by the persistence of microfilariae in the blood stream.

Hawking thought it possible that a drug might kill the adult worms without at the same time damaging the microfilariae. Culbertson and his associates administered neostibosan intravenously to 30 native Puerto Ricans infected with Wuchereria bancrofti With the exception of 1 patient suffering from periodic chyluria, all were rendered symptom free. The treatment lasted from thirty-three to forty-eight days. Of the 30 patients treated, 13 had lost all microfilariae twelve months after the end of the treatment, and 5 had lost between 87 and 99 per cent of the microfilariae. In the remaining 12 patients the microfilariae had declined from 4 to 74 per cent after nine months of observation. In a control group of 15 patients, 3 showed increases from 3 to 1,200 per cent during fourteen months of observation. When the actual course of treatment had ended, the microfilaria levels of the patient showed little or no change. The microfilaria levels were maintained or continued to decline for twelve months after the end of the treatment. The authors suggest that this slow action may be attributable to a direct action of neostibosan on the adult parasites rather than on the microfilariae.

The experience with various chemotherapeutic agents indicates that antimony compounds still hold the highest promise of all the drugs tried.

THE LIVER AND SHOCK

Shock may arise following a variety of clinical accidents. This divergence of initiating factors has given rise to a number of theories regarding the fundamental cause of shock. Some attribute the situation to toxic substances produced by tissues injured mechanically or through hypoxia; a good case can be made for a strictly neurogenic origin of the shock syndrome; drastic alteration in the usual pattern of hemodynamics is considered a reasonable basis for the development of shock. A more recent tendency, stimulated by studies in connection with the war, has been to link the causes of the recognized changes in intermediary metabolism in shock with the origin of this syndrome. In this connection the liver has been implicated in the cause of shock.

Shock produced in experimental animals is followed by a definite delay in regeneration of serum protein,[1] an observation which raises the question of the place of the liver in the development of the shock syndrome. In the shock produced by restriction of blood flow to an extremity, hepatic glycogen decreases considerably and its synthesis from administered glucose is greatly delayed.[2] Furthermore, the observation that increased levels of lactic and pyruvic acid can be demonstrated in the blood in hemorrhagic shock,[3] calls attention again to the liver in this abnormal state. Whereas the liver ordinarily has a large capacity for the metabolic transformation of amino acids, Engel and his co-workers [4] have shown that a well defined rise in the concentration of amino acids occurs in the blood of animals in shock as a result of hemorrhage and that the rate of urea formation from amino acids is also depressed. It has been suggested that the loss of potassium from body cells may be the "toxic factor" in shock.[5] Recently Darrow and Engel [6] have investigated the shifts of electrolytes and water between cells and extracellular fluids in the liver following hemorrhagic shock. It appears that an early result of the loss of blood is a shift of water from the hepatic cells to the extracellular spaces and a concomitant loss of potassium from the cells. During recovery there is a tendency to replace the lost potassium, but complete restoration of the composition of the liver is not observed.

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[1] Ebert, R. V.; Stead, E. A., Jr.; Warren, J. V., and Watts, W. E.: Am. J. Physiol. **136**: 299 (April) 1942.

[2] Haist, R. E., and Hamilton, J. I.: J. Physiol. **102**: 471 (April 4) 1944.

[3] Russell, J. A.; Long, C. N. H., and Engel, F. L.: J. Exper. Med. **79**: 1 (Jan.) 1944.

[4] Engel, F. L.; Winton, Mary G., and Long, C. N. H.: J. Exper. Med. **77**: 397 (May) 1943. Engel, F. L., and Engel, M. G.: Com. on Med. Pres., O. S. R. D., Rep. 69, December 1945, p. 746.

[5] Zwemer, R. L., and Scudder, John: J. Surg. **4**: 510 (Oct.) 1938.

[6] Darrow, D. C., and Engel, F. L.: Am. J. Physiol. **145**: 32, (Nov.) 1945.

The foregoing experimental evidence appears to implicate the liver in the development of shock. However, the Yale investigators [6] believe that this organ is readily influenced by hypoxia and that the improvement in circulation and the consequent restoration of the supply of oxygen will restore normal hepatic function. The liver is involved in so much of the metabolic picture of the body that it is not unexpected to find that these chemical transformations are changed in shock. Any claim that the liver bears a primary causative relation to this condition would seem to require further demonstration.

Current Comment

MILITARY DEATHS IN WORLD WAR II

The exact number of military deaths in World War II probably never will be known accurately. Indications are that they exceed those in World War I, which are estimated at about 8,000,000. According to a recent discussion of this subject,[1] the combat loss of belligerents in World War II was from 9,500,000 to 10,000,000. The losses of the Axis powers have been estimated at about 5,200,000, of which number Germany contributed 3,250,000, Japan 1,500,000 and Italy 150,000 to 200,000. The complete death losses of the United Nations are estimated in the neighborhood of 4,500,000, of which approximately 3,000,000 were Russian and about 400,000 British Empire deaths. Of the British Empire losses, about 250,000 were residents of the United Kingdom. The final total of United States losses on all fronts in World War II is not yet completed but is probably close to 325,000. Even though the compilations are incomplete and inaccurate, World War II was by far the most destructive in human history in terms of loss of life as well as in many other respects.

INSECT CONTROL

The Coordination Center of the Insect Control Committee, National Research Council, has prepared an Abstract Bulletin to provide abstracts of "open" reports on insect and rodent control. Several issues will be prepared. The reports were received from government agencies, the armed forces, universities and other sources. Inquiries may be addressed to the Coordination Center, National Research Council, Insect Control Committee, 2101 Constitution Avenue, Washington 25, D. C. The contents in the first issue are grouped under biology, chemistry, dispersal, entomology, rodent control and general. For security and other reasons little of this information was disseminated during the war. With the end of war, security restrictions have been removed but lack of journal space may delay publication of many of the more important articles. This bulletin provides a real service by making the information available as soon as possible.

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[1] Military Deaths in World War II, Statistical Bulletin, Metropolitan Life Insurance Company, January 1946.

HODGKIN'S DISEASE AND GIANT FOLLICULAR LYMPHADENOPATHY

A disease which simulates Hodgkin's granuloma and which, unlike it, is susceptible of cure is the comparatively newly discovered giant follicular lymphadenopathy, known also as giant follicle hyperplasia of lymph nodes and spleen and giant follicular lymphoma. This disease is characterized by enlargement of lymph nodes in various parts of the body, usually most noticeable in the superficial areas, and by splenomegaly, the enlargements in both places being due to dimensional and numerical hyperplasia of lymph follicles. Histologically, giant follicular lymphadenopathy is strikingly different from Hodgkin's disease; the microscopic distinction may be made at a glance. It differs also from Hodgkin's disease in that it is curable by mild x-ray therapy, whereas Hodgkin's disease is not amenable to any method of treatment at present known. At the moment it appears that giant follicular lymphadenopathy is well recognized by pathologists, but there are clinicians who seem never to have heard of it. Symmers [1] and Morehead and Woodruff [2] have recently shown that there is a lesion of the lymph follicles of the appendix in which the microscopic changes are identical with those of giant follicular lymphadenopathy or of giant follicular lymphadenopathy with rupture and transformation of the hyperplastic follicles into so-called polymorphous cell sarcoma, giving rise in either event to the symptoms of appendicitis.

ADRENAL HYPERTENSION

The possibility that adrenal ischemia may cause arterial hypertension was tested recently by Victor[1] and his associates of the Goldwater Memorial Hospital, Columbia University. The left adrenal glands of 6 dogs were exposed, and many of the arterioles entering the gland from the pericapsular fat and connective tissue were ligated. One ligature was placed about the vascular fat and connective tissue containing the hilar artery and vein, and a second ligature about the grossly visible arteries and veins entering either the superior or the inferior pole. Systolic and diastolic blood pressures were recorded daily before and after the operation. Before the operation the average systolic pressure was in the neighborhood of 125 mm. of mercury for all dogs. Within two weeks after the operation the average was as high as 225. There was a slight subsequent rise in systolic pressure, the pressure going as high as 280 in 1 dog. In all dogs the elevated blood pressure has persisted till the present time (seven months after the first operation). Chemical and microscopic studies are not yet completed. Evidently, however, in dogs unilateral suprarenal ischemia due to subtotal ligation of periadrenal blood vessels causes a prompt and sustained hypertension, comparable with the hypertension produced by experimental renal ischemia (Goldblatt clamps).

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[1] Symmers, Douglas: Clinical Significance of Deeper Anatomic Changes in Lymphoid Diseases, Arch. Int. Med. 74:163 (Sept.) 1944.

[2] Morehead, R. P., and Woodruff, W. E.: Solitary Giant Follicular Lymphoma of the Vermiform Appendix, Arch. Path. 40:51 (July) 194

[1] Victor, Joseph: Proc. Soc. Exper. Biol. & Med. 60:332 (Dec.) 1945.

NATIONAL HEALTH PROGRAM OF THE AMERICAN MEDICAL ASSOCIATION

Adopted by the Board of Trustees and the Council on Medical Service, Feb. 14, 1946

1. The American Medical Association urges a MINIMUM STANDARD OF NUTRITION, HOUSING, CLOTHING AND RECREATION as fundamental to good health and as an objective to be achieved in any suitable health program. The responsibility for attainment of this standard should be placed as far as possible on the individual, but the application of community effort, compatible with the maintenance of free enterprise, should be encouraged with governmental aid where needed.

2. The provision of PREVENTIVE MEDICAL SERVICES through professionally competent health departments with sufficient staff and equipment to meet community needs is recognized as essential in a health program. The principle of federal aid through provision of funds or personnel is recognized with the understanding that local areas shall control their own agencies as has been established in the field of education. Health departments should not assume the care of the sick as a function, since administration of medical care under such auspices tends to a deterioration in the quality of the service rendered. Medical care to those unable to provide for themselves is best administered by local and private agencies with the aid of public funds when needed. This program for national health should include the administration of MEDICAL CARE, INCLUDING HOSPITALIZATION TO ALL THOSE NEEDING IT BUT UNABLE TO PAY, such medical care to be provided preferably by a physician of the patient's choice with funds provided by local agencies with the assistance of federal funds when necessary.

3. The procedures established by modern medicine for advice to the prospective mother and for ADEQUATE CARE IN CHILDBIRTH should be made available to all at a price that they can afford to pay. When local funds are lacking for the care of those unable to pay, federal aid should be supplied with the funds administered through local or state agencies.

4. The child should have throughout infancy PROPER ATTENTION, INCLUDING SCIENTIFIC NUTRITION, IMMUNIZATION AGAINST PREVENTABLE DISEASE AND OTHER SERVICES INCLUDED IN INFANT WELFARE. Such services are best supplied by personal contact between the mother and the individual physician but may be provided through child care and infant welfare stations administered under local auspices with support by tax funds whenever the need can be shown.

5. The provision of HEALTH AND DIAGNOSTIC CENTERS AND HOSPITALS necessary to community needs is an essential of good medical care. Such facilities are preferably supplied by local agencies, including the community, church and trade agencies which have been responsible for the fine development of facilities for medical care in most American communities up to this time. Where such facilities are unavailable and cannot be supplied through local or state agencies, the federal government may aid, preferably under a plan which requires that the need be shown and that the community prove its ability to maintain such institutions once they are established (Hill-Burton bill).

6. A program for medical care within the American system of individual initiative and freedom of enterprise includes the establishment of VOLUNTARY NONPROFIT PREPAYMENT PLANS FOR THE COSTS OF HOSPITALIZATION (such as the Blue Cross plans) and VOLUNTARY NONPROFIT PREPAYMENT PLANS FOR MEDICAL CARE (such as those developed by many state and county medical societies). The principles of such insurance contracts should be acceptable to the Council on Medical Service of the American Medical Association and to the authoritative bodies of state medical associations. The evolution of voluntary prepayment insurance against the costs of sickness admits also the utilization of private sickness insurance plans which comply with state regulatory statutes and meet the standards of the Council on Medical Service of the American Medical Association.

7. A program for national health should include the administration of MEDICAL CARE, INCLUDING HOSPITALIZATION, TO ALL VETERANS, such medical care to be provided preferably by a physician of the veteran's choice, with payment by the Veterans Administration through a plan mutually agreed on between the state medical association and the Veterans Administration.

8. RESEARCH FOR THE ADVANCEMENT OF MEDICAL SCIENCE is fundamental in any national health program. The inclusion of medical research in a National Science Foundation, such as proposed in pending federal legislation, is endorsed.

9. The services rendered by VOLUNTEER PHILANTHROPIC HEALTH AGENCIES such as the American Cancer Society, the National Tuberculosis Association, the National Foundation for Infantile Paralysis, Inc., and by philanthropic agencies such as the Commonwealth Fund and the Rockefeller Foundation and similar bodies have been of vast benefit to the American people and are a natural outgrowth of the system of free enterprise and democracy that prevail in the United States. Their participation in a national health program should be encouraged, and the growth of such agencies when properly administered should be commended.

10. Fundamental to the promotion of the public health and alleviation of illness are WIDESPREAD EDUCATION IN THE FIELD OF HEALTH and the widest possible dissemination of information regarding the prevention of disease and its treatment by authoritative agencies. Health education should be considered a necessary function of all departments of public health, medical associations and school authorities.

MEDICINE AND THE WAR

VETERANS

VETERANS ADMINISTRATION RECRUITMENT OF PHYSICIANS

The enactment of Public 293, which created the new Department of Medicine and Surgery of the Veterans Administration, has proved most helpful in the procurement of physicians, dentists and nurses In the first six weeks of the operation of this law 797 new physicians have accepted appointment

Of the newly appointed physicians, 57 are specialists certified by one or another of the approved examining boards These include

American Board of Internal Medicine	17
Neuropsychiatry	16
Radiology	6
Otolaryngology	5
Surgery	4
Pathology	4
Ophthalmology	2
Urology	2
Gynecology and Obstetrics	1

It is most encouraging that the proportion of applications from certified specialists is constantly increasing The professional opportunities offered in the remodeled medical service of the Veterans Administration are attracting a very high quality of medical talent

Approximately 150 residents are now in training, and this number will be more than doubled before this issue of The Journal goes to press The Veterans Administration hopes to have 750 residents in training within four months All residencies will have the approval of the specialty boards before being offered

There are still vacancies in the Department of Medicine and Surgery of the Veterans Administration Applications are welcomed from two classes of physicians—those who are already well trained and well qualified and those who desire to become well trained and well qualified Great opportunities for teaching and research are offered the former group, and unexcelled opportunities for graduate training are offered the latter

MARQUETTE UNIVERSITY PHYSICIANS TO TAKE CHARGE OF VETERANS HOSPITAL AT WOOD, WIS

The Veterans' Hospital at Wood, Wis, recently became a university hospital of Marquette University School of Medicine, Milwaukee, after a conference of Veterans Administration heads with a committee headed by Dr Eben J Carey, dean of the school Under the plan, physicians now at Veterans' Hospital will continue in administrative positions, and specialists from Marquette University School of Medicine will be in full charge of the medical care of veterans

Taking part in the conference was Major Paul B Magnuson, former professor of surgery at Northwestern University Medical School, Chicago, new chief of research for the Veterans Administration, Washington D C, Lieut Col Lyle Baker, medical chief of staff at Hines Veterans' Hospital, Maywood, Ill, and Lieut Col Glenn Mullins, chief medical officer of the hospital at Wood

The committee consists of Dr Fred Madison, who will be in charge of medicine, Dr Carl W Eberbach, surgery, Dr Henry Olsen, obstetrics and gynecology, for women veterans, Dr Herman Schumm, orthopedics, Dr John Garvey, neuropsychiatry, and Dr Leander Van Hecke, pathology The consultants will serve half of each day at salaries up to $6,000 Consultants and residents will be appointed by the dean's committee with approval of the Washington office of the Veterans Administration

MISCELLANEOUS

HOSPITALS NEEDING INTERNS AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their house staff quota allotted by the Procurement and Assignment Service

CALIFORNIA

San Diego County General Hospital San Diego Capacity 727 admissions, 6 304 Dr H M Fine Superintendent (resident—tuberculosis discharged medical officer, May 15)

CONNECTICUT

Bristol Hospital, Bristol Capacity 180 admissions 4 414 Miss F L Sanborn R N, Superintendent (resident—mixed service)

INDIANA

Clinic Hospital, Bluffton Capacity 51, admissions 2 058 Dr Harold D Caylor (resident—mixed service)

Ball Memorial Hospital Muncie Capacity, 247, admissions 6 890 Miss Nellie G Brown, R N, Superintendent (interns July 1)

MINNESOTA

St Luke's Hospital Duluth Capacity 270 admissions 8 995 Mr James McNee Superintendent (resident—pathology)

NEBRASKA

Lincoln General Hospital Lincoln Capacity, 223, admissions 5 649 Mr Robert B Witham Administrator (3 interns 1 male 2 female, resident—mixed service)

NEW YORK

Goldwater Memorial Hospital New York City Capacity, 1,660, admissions, 1,505 Dr C G Scherf, Superintendent (2 residents—pathology, discharged medical officers July 1)

OHIO

Glenville Hospital Cleveland Capacity, 135 admissions 3 380 Mr Arthur B Harris Superintendent (resident—mixed service July 1)

St Elizabeth Hospital Dayton Capacity, 375, admissions, 9,126 Sister Devota Administrator (intern, residents—mixed service)

UNRRA NEWS

Artificial Limb Program in Liberated Countries

The United States Relief and Rehabilitation Administration Washington, D C, recently announced that thousands of persons in Europe and Asia who lost arms or legs as a result of the war will receive artificial limbs as a result of arrangements completed between UNRRA and the governments of five countries Under the arrangements the governments of these countries will set up plants to manufacture the limbs under government ownership and operation UNRRA will supply necessary component parts of machinery and equipment which must be obtained in the United States, and also some of the materials for the limbs, at least at the start of the operation UNRRA also will arrange for training workers in the government owned plants

The governments which already have asked UNRRA to aid in establishing their factories are those of Greece, Yugoslavia the Ukraine Byelorussia and Poland The Chinese government probably will make a similar arrangement

In addition, as part of its medical program UNRRA will provide emergency supplies of limbs manufactured in this country to persons in Greece before the Greek government can set up its plant

ASSIGNED TO SURGICAL CONSULTANTS DIVISION

Lieut Col Oscar P Hampton Jr University City Mo was recently assigned to the Surgical Consultants Division Orthopedics Branch Office of the Surgeon General Dr Hampton was recently awarded the Legion of Merit (The Journal, January 26, p 219)

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECÓMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Brown, Alexander J, Capt, 100 Beverly Ct, Mobile
Crutcher, John S Jr, Col, 200 N Madison St, Athens
Davis, John W Jr, Major, 220 Wellington Road, Montgomery
Irwin Winston H, Major, 2505 16th Ave, North Birmingham
Jackson, James T, Maj, 218 Ponce de Leon Ave, Montgomery
Johnston, William L, Capt, 2116 11th Avenue, S, Birmingham
Kincannon, Leroy T, Major, 2926 Canterbury Rd, Birmingham
Oliver, Ernest B, Lt Col, 3245 Carlisle Rd, Birmingham
Owens, Arthur H Jr, 1st Lt, Ashland

Arizona

Barker, Clyde J Jr, Capt, 15 E Monroe, Phoenix
Beckwith, Harry S, Major, Santa Fe Hosp, Winslow.
Cunningham, Robert D, Capt, San Carlos
Duboe, Sidney H, Capt, 1017 N 3d St, Phoenix
Kawaichi, George K, Major, Poston Gen Hosp Poston
Maury, Franklin H, Major, 309 Valley Nat Bldg, Tucson
Schnabel, Garfield P, Major, 3009 N 16th St, Phoenix.
Ure, William G, Capt, 649 E 5th St, Tucson

Arkansas

Atkinson, Henry H, Capt, Crossett
Burnett, James W, Major, 2005 Beech St, Texarkana
Dickerson, Cecil H Jr, Capt, 1721 Scott St, Conway
Gray, Herschel F, Capt, 1505 Welch St, Little Rock
Jernigan James P, Major, 722 E 15th St, Little Rock
Lesh, Vincent O, Major, 423 E Spring St, Fayetteville
Mahan, Thomas K, Major, 1054 Holly St, Blytheville
Pinson John H Jr, Capt, 515 E Faulkner St El Dorado
Sims, Hunter C, Capt, 1111 Ash St, Blytheville

California

Abbott, Kenneth H, Capt, 125 W F St, Ontario
Allison, Ray L, Lt Col, 300 Corbett St San Francisco
Babcock, Daniel W Lt Col, Placerville
Bachmann, George W, Capt, 1200 N State St Los Angeles
Bailey, Nicholas E, Capt, 203 43rd Avenue Manhattan Beach
Carey, Willard W, Capt 567 Kentucky St Gridley
Drane, Walter H, Capt, 852 Westchester Pl, Los Angeles
Fisher, Carl W, Capt, 221 River St Santa Cruz
Kerhulas, Gus F, Capt, 184 3d St, San Francisco
Klabunde, Earl H, Capt, 490 Post St, San Francisco
Lewe, Irving A Major, 5201 Lincoln Ave Los Angeles
McPherson Henry A, Capt, 3760 Dalton Ave Los Angeles
Overpeck, Darrell O, Lt Col, 251 Yosemite Ave, Fresno
Schwartz, Walter F, Capt, 616 First Trust Bldg, Pasadena
Wexler, Manuel R, Major, 1745 Canfield Ave, Los Angeles

Colorado

Bradford, Henry R Capt, 2525 S Wadsworth Mt Morrison
Campbell, Joseph L, Capt, 1655 Glencoe St, Denver
Campbell, W A Jr, Major, 1600 N Nevada, Colorado Springs
Charney, Leon J, Capt, 1083 S High St, Denver
Christman, Edmund E, Capt, Corwin Hospital Pueblo
Cooke, Myron W, Capt, 338 Piatt, Longmont
Fenton, Ward C, Major, Rocky Ford

Connecticut

Comodo, Nicholas M, Capt, 134 George St, Hartford
Connolly, Joseph P, Major, 104 South St, Stamford
Coshak, Morris Capt, 20 E Main St, Waterbury
Cummings, Kenneth L, Capt, 34 Ardmore Place, Fairfield
DeBlasio, Guido A, Capt, 789 Howard Avenue New Haven
Donnelly, James F, Capt, 37 Barnet St, New Haven
Dwyer, Christopher E, Capt, 14 Pine St, Waterbury
Ewing, Henry W, Capt, 825 Prospect Ave, Hartford
Feldman, Joseph D, Capt, 29 Andover St, Hartford
Fender, Sidney, Major, 220 Park St, New Haven
McCarthy, James S, Capt, 640 Whitney Avenue New Haven
Muller, Oscar J, Capt, 147 E Main St, Waterbury.

Delaware

Berger, Simon M, Capt, Selbyville
Richards, Charles F Jr, Capt, 314 N Bradford St, Dover.
Skura, Frank S, Capt, 304 S Broom St, Wilmington

District of Columbia

Agee Fred B, Major, 2701 Conn Ave N W, Washington
Blajwas, Abe, Capt, 1915 Kalorama Rd N W, Washington
Bradley, Thomas Major, 1633 29th St N W, Washington
Cawley, Frank T, Lt Col, 249 Oglethorpe St N W, Washington

Florida

Ayer, Orion T, Capt, 128 W Columbia St, Gainesville
Black, Irby H, Capt, Suwannee St, Live Oak
Cole, Herschel G, Major, 2808 Morrison Ave Tampa
Ferrara, John D, Major, Box 141 B, Chaseville Road South Jacksonville
Galin Jack, Major, 931 Rubel St, Jacksonville
McElheny, Franklin, Capt, 5859 N F 2d Ave Miami
Smith, James A, Capt 112 W 20th St, Sanford
Youmans, Corren P, Col, 653 S W. 2d St, Miami

Georgia

Arnold, James H, 1st Lt, 35 Jefferson, Newman
Berman, Dave, Capt, 304 Doctor's Bldg, Columbus
Berry, Arthur N, Major, 912 Benning Blvd, Columbus
Brown, Lester A, Capt, 450 Clairmont Ave, Decatur.
Bryan, Phillips R, Major Reynolds
Carithers, Hugh A, Capt, Winder
Chandler, John L Jr, Major, 11 Notasulga Dr, Rome
Chastain Philip J, Capt, PO Box 26, Thomasville
Davis, Marion B, Major, 615 Collier Road, NW, Atlanta

Idaho

Ross, Warren B, Capt, 721 5th St, South, Nampa

Illinois

Auten, Hanford L, Capt, 1008 Pleasant St, Oak Park
Ballard, George P, Capt, 3231 Fulton Blvd, Chicago
Baranov, Lester J, Capt, 5918 W Schubert Ave, Chicago
Camp, Edward H, Major, Crystal Lawns, Joliet
Daly, Anthony J, Capt, 2112 Fremont St, Rockford
Epsteen Casper M, Major, 5513 Cornell Avenue, Chicago
Fink, Frederick, Major, 1909 Noble Avenue, Springfield
Gibbel Melvin I, 1st Lt, Girard
Ireland, Harry J, Capt, 1204 Ellis St, Peoria
Jefferson, Ronald N, Capt, 426 E 51st St, Chicago
Kahn David Capt, 5346 Cornell Ave Chicago
Law, Otis H Capt, 711 North Mill, Pontiac
Reynolds Edwin C, 1st Lt, 6740 Cermak Road Berwyn

Indiana

Arnold Aaron L, Major, 3753 N Meridian, Indianapolis
Baker, Leslie M, Major, 308 5th St Aurora
Close, Walter D, Major, 423 W 43rd St, Indianapolis
Cole, William L, Capt, 1700 Bayard Park Dr, Evansville
Dickinson, Gordon A Capt, 1011 E Main, Petersburg
Garfield, Martin D, Capt, 1720 W Fifth St, Gary
Kenyon, Charles E, Major, 303 N Mulberry St, Cambridge City
Oliphant, Robert W Capt, 3325 Wabash Ave, Terre Haute
Quick, William J, Capt, 2009 University Avenue, Muncie
Wilkens, Irvin W, Major, RR 1, Box 403, Indianapolis

Iowa

Alftine, David C, Capt, Box 474, Vinton
Anneberg Walter A, Capt, 1616 N Carroll St, Carroll
Armitage, George I, Capt, Murray
Black, Nelson M Jr, Capt, University Hosps, Iowa City
Block, Lawrence A, Major, 1026 E Rusholme St, Davenport

Kansas

Barnes, Harold R, Capt, 408 E 15th St, Hutchinson
Betz John S, Capt, 622 Orient Drive, Kansas City
Binter, Paul A, Capt, 317 Race St, El Dorado
Enders, Edwin W, Capt, 1925 Rhode Island St, Lawrence
Evans, Arthur W, Capt, State T B C Sanatorium, Norton

Kentucky

Andrews, Harry S, Lt Col, 3015 Brownsboro Rd, Louisville
Andrews, Kenneth R, Major, 246 S Hanover, Lexington
Barrett, Arthur B, Lt Col, 971 E Cooper Dr, Lexington
Beasley, Lillard F, Major, Franklin
Chambers John S Jr, Capt, Russell Cave Pike Lexington
Clay, Herbert L Jr, Major, 308 Kenwood Dr, Louisville
Colbert Morgan R, Major, Norton Mem Infirmary, Louisville

Louisiana

Birdwell, Jack B, Major, 275 Preston Ave, Shreveport
Boaz, Thurmond DeW. Jr, Capt, 554 Jordon St, Shreveport
Carroll, Winton H, 1st Lt, 101 E Merrick St, Shreveport
Hite, Lad P, Capt, Hotel Dieu New Orleans
Maltry, Emile Jr, Major, 4430 S Galvez St, New Orleans
Parker, Julian G, Capt, Charity Hosp of La, New Orleans

PHYSICIANS SEPARATED FROM SERVICE

Maine

Adams, Winford C., Major, 7 Park St., Orono.
Christensen, Harry E., Capt., 388 Westbrook St., Portland.
Emery, Clarence Jr., Lt. Col., 92 Essex St., Bangor.
Hunter, William A., Major, Harrison.
Pritham, Howard C., Capt., Greenville Junction.

Maryland

Austrian, Robert C., Capt., 1417 Eutaw Pl., Baltimore.
Burtnick, Lester L., Major, 2810 Suffolk Ave., Baltimore.
Cotter, Edward F., Lt. Col., 418 Murdock Rd., Baltimore.
Diggs, Everett S., Major, 1510 Pentridge Rd., Baltimore.
Gould, John J., Capt, 5800 Stoney Run Dr, Baltimore.

Massachusetts

Achin, Joffre V., Capt., 7 Auburn St., Worcester.
Baird, Raleigh W. Jr., Capt., 1265 Beacon St., Brookline.
Carp, Sumner, Capt., 949 Blue Hill Ave., Dorchester.
Dawes, Daniel C., Capt., 259 Beacon St., Boston.
Hay, William E., Major, 135 Washington St., Brighton.
Karpawich, Peter P., Capt., 237 Millbury St., Worcester.
Princi, Frank, Capt., 5 Taylor St., Boston.
Titus, Harold A., Major, 72 Raven Road, Lowell.
Whelan, Edmund L., Major, 101 Gladstone St., East Boston.

Michigan

Alper, Louis, Capt., 2900 Pingree, Detroit.
Becker, Harry F., Col., 47 Woolnough Ave., Battle Creek.
Chittenden, George E., Major, 7815 E. Jefferson Ave., Detroit.
Fallis, R. E., Capt., 1206 Security Tower Bldg., Battle Creek.
Jack, Williaw W., Capt., 301 College Ave. S.E., Grand Rapids.
Klein, John P., Capt., Reed City.
Stein, Saul C., Capt., 18905 Cherrylawn, Detroit.
Tate, Cecil E., Capt., 817 Westwood Blvd., Jackson.

Minnesota

Addy, Edward R., Capt., 107 Iowa, Gilbert.
Demong, Charles V., Capt., Mayo Clinic, Rochester.
Finlayson, Alister, I., Capt., 727½ 6th Ave. S.W., Rochester.
Hartnagel, Grant F., Capt., 719 McSorluy St., Red Wing.
Peterson, Lowell J., Capt., 515 Fountain St., Albert Lea.
Ulferts, Ulfert R., Major, Route 1, Clara City.

Mississippi

Applewhite, Austin H., Capt., Columbia.
Cave, William H., Capt., Med. Arts Bldg., Greenville.
Dabney, William M., Major, Okolona.
Green, James C., Capt., 210½ Main St., Tupelo.
Sheffield, Gettis T., Col., Vet. Admin., Gulfport.

Missouri

Arroyo, Alfonso S., Capt., 474 Post Office Box, St. Louis.
Camp, George H., Major, 718 E. Walnut St., Springfield.
Davis, Lucius S., Capt., 1536 Papin St., St. Louis.
Guccione, Joseph B., Capt., 6911 Reder St., St. Louis.
Kantor, Julius M., Capt., 207 E. 74th St., Kansas City.

Montana

Grosboll, Ashley N., Capt., Phillipsburg.
Perkins, John R., Capt., Ft. Harrison.

Nebraska

Arnold, Charles H., Lt. Col., 2480 Lake St., Lincoln.
Barber, Herbert G., Capt., 205 N. 48th St., Omaha.
Bartos, Paul V., Capt., 760 N. Park St., Omaha.
Carp, Oscar, Capt., 1484 Wirt St., Omaha.

New Hampshire

Asselin, Edward D., Capt., 37 Raymond St., Nashua.
Ballou, James M. Jr., Capt., 53 Summer St., Keene.
Beaudoin, Robert A., Capt., 39 High St., Berlin.
Brown, Irving E. Jr., Capt., 3 Scruggs Block, Woodsville.
Cote, Philippe J., Capt., 267 Kelley St., Manchester.
Foley, Thomas F., Capt., 547 Maple St., Manchester.
Hamel, Fernand A., Lt. Col., 233 Union Avenue, Laconia.

New Jersey

Abel, Henri E., Major, 339 Union Ave., Elizabeth.
Chudzik, Edward W., Major, 295 Maple Ave., Wallington.
Dann, Frederick J., Capt., 619 Stuyvesant Ave., Irvington.
Haines, Keith E., Major, 651 Linwood Avenue, Collingswood.
Kennedy, John W., Major, 414 61st St., West New York.
Ocheret, Irving, Major, 334 Central Ave., Orange.
Van Wiemokly, Seymour S., Capt., 61 Mills St., Morristown.

New York

Adelman, Milton H., Major, 8902 Avenue A, Brooklyn.
Baston, Frank D., Major, Tully.
Cadmus, Robert R., Major, 300 W. 23d St., New York.
Dalton, Elbert, Capt., Beaver Falls.
Edgehill, Harold L., Capt., 417 W. 145th St., New York.
Feidelman, Milton J., Capt., 1356 53d St., Brooklyn.
Hammer, Meyer, Capt., 1329 Morris Ave., Bronx.
MacMillan, Laurence S., Capt., 212 N. George St., Rome.
Salerno, Louis J., 1st Lt., 780 E. 234th St., Bronx.
Zauderer, Seymour J., Capt., 418½ E. 6th St., New York.

North Carolina

Brooks, Ernest B., Major, Plymouth Avenue, Winston-Salem.
Brown, James W. Jr., Capt., Gatesville.
Bryant, Walter E., 1st Lt., Duke Hosp., Durham.
Cathell, Edwin J., Col., 16 W. 1st Avenue, Lexington.
Chesson, Andrew L., Major, 807 North Road, Elizabeth City.

North Dakota

Brown, Gerald F., Capt., 101 4th Avenue, S., Grand Forks.
Cowley, Howard S., Capt., 501 7th St., Devils Lake.

Ohio

Allard, Lorenzo D., Capt., 1915 Chillicothe St., Portsmouth.
Kallenberg, Joseph B., Capt., 857 Windham Ave., Cincinnati.
Stevens, Robert W., Major, 129 Jefferson Rd., Newark.
Yaw, Owen F., Major, 256 W. Orchard St., Logan.

Oregon

Bain, Lyle M., Lt. Col., 410 Walnut St., Albany.
Berg, Richard F., Major, 6430 S.W. Park Hill Way, Portland.
Bitar, E., Capt., 761 SW Vista (Adele Manor) Portland.
Cronin, Joseph M., Capt., 432 Main St., Klamath Falls.
Inderlied, Herman F., Major, 913 S.W. Gaines St., Portland.
Roberts, J. M., Lt. Col., 6404 S.W. Parkhill Way, Portland.
Thompson, Claude V., Col., Vet. Admin. Center, Portland.

Pennsylvania

Armstrong, Thomas S., Capt., 5437 Ellsworth Ave., Pittsburgh.
Darnell, Richard I., Capt., 821 Paxinoxa Avenue, Easton.
Gallagher, James T., Capt., 204 W. Main St., Palmyra.
Jacobs, David, Capt., 6771 Germantown Ave., Philadelphia.
McKee, Robert M., Capt., 225 Wilson Ave., Beaver.
Shore, Sidney, Capt., 720 W. Berks, Philadelphia.

South Carolina

Allen, Albert L., Capt., % Mrs. W. D. Gleaton, 42 Church St., Orangeburg.
Alverson, Reginald C., Major, % Greer Drug Co., Greer.
Armstrong, Charlton P. Jr., Capt., Fountain Inn.

South Dakota

Cramer, Lloyd L., Major, Hot Springs.
Jones, John P., Major, 304 N. Main St., Mitchell.
Nietfeld, Aloys B., Capt., 308 N. Wayland, Sioux Falls.

Tennessee

Angelucci, Ralph J., Major, Vanderbilt Hosp., Nashville.
Busey, John F. Jr., Major, U. S. Vet. Hosp., Mountain Home.
Cardwell, Robert J., Capt., Nashville G. H., Nashville.
Carrier, Everett E., Major, 207 W. 5th Avenue, Fountain City.
DeGutierrez-Mahoney, Carlos G., Lt. Col., Vanderbilt U. Hosp., Nashville.

Texas

Ainsworth, William H., Capt., John Sealy Hospital, Galveston.
Dathe, Richard A., Lt. Col., 2703 Oak Lawn Ave., Dallas.
Hodges, Frank C., Major, 102 Oldham Lane, Abilene.
Lawrence, Buell A., Capt., 704 Dallas Ave., Houston.
Winborn, Claude De, Lt. Col., 1026 S. Beacon, Dallas.

Virginia

Ambler, John T. B., Capt., 371 Allison Ave. S.W., Roanoke.
Clary, Beverly B., 1st Lt., 2809 Hawthorne Ave., Richmond.
Dixon, Joseph M., Lt. Col., 1510 Franklin Rd., Roanoke.
Kuhnert, Thomas H., Capt., 819 Moore St., Bristol.
Oglesby, Forrest E., Major, Box 23, Oceana.
Trice, Ernest T., Lt. Col., 1701 Grove Avenue, Richmond.

Washington

Bowers, James M., Major, 3417 Shore Dr., Seattle.
Grover, Glenn G., Capt., 3354 E. Laurelhurst Drive, Seattle.
Lyon, Clarence L., Capt., 423 W. 24th Ave., Spokane.
Rickles, George A., Capt., Fort Steilacoom.

ORGANIZATION SECTION

ANNUAL CONFERENCE OF SECRETARIES AND EDITORS OF CONSTITUENT STATE MEDICAL ASSOCIATIONS

Dr. Creighton Barker, New Haven, Conn., Presiding

(Continued from page 652)

Friday, February 8—Afternoon

State Plans for Aid to Returning Medical Veterans

Major General George F. Lull, Associate General Manager, American Medical Association: I should like to read you a letter received here at headquarters. This letter is typical of many we receive from men in the service and from veterans. This is a little stronger, probably, than the average, but some of the letters are even stronger than this. This was written to the Editor of The Journal:

"We would like to know what the American Medical Association is doing for us who have risked our lives a thousand times that the rest of you might be smug and secure.

"I personally was with the famous 100th First Airborne Division for over two years, and as a qualified glider combat infantry physician I am lucky to be alive and not disabled.

"Most of my medical friends, many younger than myself, who played up trivial disabilities to dodge their responsibilities during the national emergency, have made enough money during our absence to retire or take it easy for the rest of their lives with the cream of the practice.

"What have they done for us besides pat us on the back, congratulate us on returning home alive and well? Nothing! What have the local, state and national medical societies done for us? We don't expect monetary returns, and although they inveigled us into the service with promises of an endowment system of some sort which would compensate us for our loss, no promises were kept. However, this was too much to expect of selfish human motives.

"Once and for all the barriers must be lifted if justice is to be done, and we know your medical trust has exerted powerful influence against us. Reconsider our case, or ten thousand of us shall fight you in federal courts with the last dime and breath we possess. There is no need for your dictatorial censorship. That is what we fought for and shall continue to fight for to our dying day!"

That is a letter received from a man who is angry, and he is going to take it out on somebody. While he is in the Army he thinks the Surgeon General and the American Medical Association are to blame; the nearer he comes to getting out the more blame he pushes on the American Medical Association. Neither of them in ninety-nine cases out of a hundred had anything to do with his particular situation.

One of the problems organized medicine has to face at present is this returning medical veteran. This problem faces our societies at the county, state and national levels. It is at the lower levels, however, where the greatest aid can be given to these men who left their practices to enter service in the armed forces.

Lack of housing, of suitable office space, and the inability to secure equipment, automobiles and clothing are problems that arise in many communities. I am a victim of that myself; my prewar clothes are such that they don't fit in certain places, and buying a suit of clothes now is just like when we used to buy a gallon of moonshine in the prohibition days: You have to have a friend who knows a fellow who has a suit, and in that way you get one. Housing is about as bad.

The inability to secure housing and office space is much greater in the urban than in the rural communities. It is up to medical organizations to aid these men. Many of these veterans gripe about having been forgotten men by their county, state and national organizations. This is not universal, however, and in many cases could not have been completely avoided. The time to render them service that would be appreciated is immediately on their return.

The American Medical Association established a Bureau of Information in September 1944. Its function in brief is as follows:

Medical officers contacting the Bureau for information regarding opportunities in certain states are furnished with complete listings of the areas in the states where there is need for a physician. Summary sheets giving the medical facilities and the physician aspects of the country are available for a particular area in which the doctor may be interested. For further information regarding the establishment of a practice in a certain area he is referred to the secretaries of the state and county medical societies. Specific inquiries regarding postwar education are referred to the Council on Medical Education and Hospitals, where a survey is made every six weeks to ascertain the number of vacancies available in approved hospitals for returning medical officers.

The Council is also continuing its efforts to establish additional high grade residency programs in hospitals that have not yet developed their educational services to the fullest capacity. All requests for information regarding medical education, licensure, relocation and benefits available to medical officers under the G. I. Bill of Rights are referred either to the Bureau of Legal Medicine and Legislation or to the Council on Medical Education and Hospitals. The same procedure is followed in interviews with the returning veterans who have visited headquarters in person.

All inquiries receive careful attention, and every effort is made to supply complete information to all medical officers. Since V-J day the Bureau of Information here has received each week about 565 letters from medical officers, and a weekly average of 110 physicians have come to the office for specific information in their adjustment to civil life.

In order to give this service to the returning veteran we must rely on the state and county societies to give us accurate statistics covering the medical facilities of every community. We must at all times, through the cooperation of the state and county medical societies, have a picture of the medical personnel in their areas and of the present and future needs for the adequate medical care of the community.

There is considerable difference between what happens at the state or the county level and what happens here in headquarters. As a rule the man who comes here is a man looking for a location or a residency or further education, and he has not decided himself just where he will settle or where he would like to settle. He is open minded about it. The man who comes to you has narrowed it down to the state level, and, as he goes on down the line, to the county level.

Under date of Jan. 3, 1946 the Bureau of Information requested all state medical societies to furnish them with detailed information as to their plans and those of their constituent societies for the returning veterans. To date twenty-seven societies out of the forty-nine have replied. These replies indicated the vast difference in the problems in different geographic areas; for instance, one Western state replied "The majority of the fifty-three physicians who left practice in .... State to enter the armed forces have by this time returned to their respective communities and again have taken up where they left off."

It would be foolish for that state to establish a big office or to publish bulletins of information, because there is no need of it. This is the exception, however, rather than the rule.

The problems in the various states vary greatly, owing to the distribution of population largely and to the requirements in the specific state. Some states reported that they have taken no steps to aid the returning physician. We discounted this as we know that if the returning physician goes to state headquarters or to the state secretary he will be given advice and all the information possible. Usually in those states the secretary has all the information at hand. He does not have to depend so much on the county societies. Although some of these states may be geographically large, the population is usually low.

I have selected a few replies and will quote them as examples. Many of the aids being cited in the examples quoted have also been extended to veterans by other state and county medical societies and are not original by any means, but they give a good cross section of the action taken.

The District of Columbia Medical Society was taken as an example of one whose membership comes from an entirely urban population, with no problems common to rural areas. I quote extensively from the secretary's report:

"We are endeavoring to obtain office space for physician veterans by every possible method. We have directed letters to the Board of Trade, the Real Estate Board, the Public Buildings Administration. We have conferred with owners of buildings and real estate men. We have issued statements to the press. The results have been fair. We did locate one six-story building which is being converted by the owner into a professional building.

"There are other prospects in the offing, but the situation generally is not good. We are seeking priorities for doctors, especially for automobiles. Wires have been sent to all automobile distributors in Washington requesting their cooperation. The response to date has been good. We bring the veterans up to date on new laws relative to licenses, narcotics and so on. We have published the return of service physicians in the newspapers. A list of them was published in the *Washington Post* a short time ago. Several veterans called on us stating that they had received calls thereafter.

"We give the veteran a six month subscription to our telephone exchange, the Medical Bureau. When we receive calls from patients who do not have a family doctor, they are shown preference. We have complete data on postgraduate courses offered by local medical schools, as well as pamphlets on postgraduate courses in other schools throughout the country. These are provided veterans on request."

In addition to the foregoing, the secretary personally counsels with veterans when they come home and come into the office. The secretary of the society has corresponded with its members during the war by sending them news letters at least every sixty days. As they are all located so close to the society's office, that is, in peacetime, most of them come to see the secretary on their return from service.

"I believe that one of the best things that can be done for returning medical veterans is to discuss in person their problems and give them advice. In this way, rather than by means of letters and bulletins which are valuable in themselves, it gives a personal touch, and the man is more appreciative of what is being done for him than if he simply reads it in a bulletin."

As an example of a state with many problems involving rural practice, I have selected the report from the secretary of Oklahoma. "The Oklahoma State Medical Association," quoting from his report, "has completed a comprehensive survey of the medical needs of the state, which was made by component county societies. They also have published a year book which gives the new doctor facts about the practice of medicine in the state and brings the returning practitioner up to date.

"Oklahoma has mailed to all service men of the state a letter telling them of the services available in the headquarters office should they desire to avail themselves of it. The office also acts as a clearing house for information concerning postgraduate and refresher training at the state university and medical schools located outside of the state. Several county medical societies have likewise set up committees to assist in the securing of office space and loan funds should veterans need ready cash. One county medical society has raised sufficient funds to guarantee office rent and equipment for its members if needed.

"The state medical society is sponsoring a continuing course in surgical diagnosis which all military officers on active duty and in government installations of the state are able to attend free. These courses are particularly well adapted to the returning veteran."

The secretary modestly added at the end "Obviously the foregoing is no greater nor lesser than all other state medical associations are doing" and calls attention to the fact that they operate largely on the basis of a rural area.

It was impossible to tabulate definitely just what each state was doing. However, some of the aids that have been extended varied from a remark submitted by one state, "We have no organization or definite program," to rather extensive and detailed programs submitted by other states. Obviously the report received from the state that had no definite program did not mean that the veterans would be given a cold shoulder should they ask for guidance or aid. It simply meant there was nothing organized and that the veteran would have to seek for himself.

Seven of the states replied that, although they were helping the veteran, they had no organized program. Several more stated that they extended a letter of welcome to the returning veterans as soon as they found out they were back. Ten of the states stressed the personal contact I have mentioned previously, and certain states have waived the dues for veterans for the first year after they return. Quite a few states have raised loan funds which are readily obtainable by the veteran. One county medical society sent in a copy of a large advertisement which had been placed in the county newspapers, giving the names of the returning service men in the county and those still in the service and advising patients to return to them when they needed medical care provided the specific doctor had opened his office.

Many county medical societies have Welcome Home dinners for returning veterans. Mention was made of the fact that in some places physicians had leased doctors' offices. These men in some places were being asked to vacate when the doctor returned and desired his office back. In many states the state medical associations' headquarters acted as a clearing house in most states for all medical information and got in touch with the veterans in many cases by phone, letters or by wire upon their return.

Out of the twenty seven replies received, twenty showed that a definite, active program was being carried out at the state and county levels, and I have no doubt that active programs are being carried out in many of the states from which no replies have been received.

Returning veterans are going to play an active part in organized medicine in the future. They have been in close contact with doctors from all parts of the country, in hospitals and camps. They have discussed with one another the various problems of organized medicine, and many of them have definite ideas as to what should and what should not be done.

We have received in the headquarters office quite a number of letters from men in the service who complain bitterly about what they have heard from men who have been separated and returned to practice. They resented the fact that some of the men considered nonessential in the community, and not available for military service, were now reaping the benefits of huge practices. From the tone of these letters these men have no grudge against the older men or against the men who had to remain at home on account of their essentiality. They complain, however, that there were some men who remained at home because of alleged essentiality. This of course is a matter of opinion only, but I know they have definite views on this subject and will express themselves vocally on their return.

I should like to call attention to one thing I have heard rumors about—not only rumors but talk—and that is in certain localities county societies are refusing memberships to doctors who come into the county—a flat refusal. Any doctor going into the county is refused membership in the county society. The one county I have in mind in particular was probably the most vocal county during the war, demanding that doctors be not taken, and that all residents in the county be deferred and every other man who was selected be deferred. Now I understand no one who was not there during the war or prior to the war will be allowed to join the county society. That is the story I have heard.

No doubt there is going to be quite a shift of physicians in the United States. This occurred after the last war and included all age groups. Many doctors make contacts in the Army which lead to partnership or membership in groups in places other than where they practiced prior to the war. A great load has been thrust on our hospitals and teaching institutions on account of the large number of veterans who desire either refresher courses or further training in some specialty. This will continue for several years, as many of them want two or three year courses, and the young men who entered the services during the last year or two have for the most part only a nine months internship. The bulk of these men will desire further training when they are released. The hospitals and colleges have done an excellent job in trying to absorb this huge load.

In closing I would like to say that any assistance you can render the veteran will repay your organization many times, as it starts the man out with a feeling of friendship and appreciation. This normally should be followed by an active interest in the organization.

DISCUSSION

Dr. Victor Johnson, Chicago: We have realized since the beginning of the war the responsibility that faces the Council on Medical Education and Hospitals in providing additional facilities for medical officers, particularly residencies. We sought to obtain as much sound information as we could so that we could employ the term "estimation" instead of "guessing," but much of it nevertheless was guessing. We tried to find out what medical officers would want in the way of additional training through questionnaires distributed to all the men in the armed forces, to some 63,000 of them. We obtained replies from 21,000 and we knew thereby, relatively objectively, what these 21,000 men said they wanted at the time they said it. There remained the guesswork of two kinds, How many men who said they wanted training would, on return, decide that after all they did not want it? Secondly, What about the 40,000-odd men who failed to reply to these questionnaires? What would they want? There is no way statistically, I am told by people who conduct polls, to make a reasonably good estimate on matters of that kind. We did the best guessing we could and arrived at the conclusion that about twice as many residency places would meet the probable needs as we had in the prewar days. A second guess had to be made, namely, When would the war end, particularly how long would be the period of time between V-E day and V-J day? We asked General Lull and other important persons who were well qualified to guess, and we arrived at this tentative estimate that perhaps around two years after V-E day we might expect that most of our medical officers would be discharged. We know now that in less than a year after V-E day most of the medical officers will be discharged. None of us regrets the rapid termination of the Asiatic phase, but it has made some of our estimates look much more like guesses.

Because of this rapid discharge of medical officers now, we have had to devise a number of procedures relatively quickly. Some of these have been mentioned. We have worked with the Procurement and Assignment Service and helped to induce them not to count veteran physicians on hospital quotas. A hospital with a quota of ten house officers could add five veterans without being penalized by the Procurement and Assignment Service. Furthermore, we have urged the discontinuation of the 9-9-9 program to the Procurement and Assignment Service, and that will be discontinued this spring. That is important because it means, as far as the veterans are concerned, that none of the recent graduates will be permitted more than a year of internship, none of the recent graduates therefore will occupy places which veterans might occupy, and consequently there will be freed around April 1 approximately 2,000 residencies for returning medical officers; there will be no more quotas at all after April 1. Also we have been working with the specialty boards on the temporary approval of residencies. In peacetime it took a long time to get a residency approved. The hospital would apply. When our inspector happened to be in that region of the country he would inspect the hospital. At the next meeting of the Council the application would be considered; it would then be referred to the specialty board, and at its next meeting it would be considered. Perhaps six or eight months, even a year, would elapse between application and final approval. That was all right in peacetime, but it is unsatisfactory at present. We are working with the boards on a scheme for temporary approval of hospitals which should reduce the time between application and final approval on a temporary basis to something like two weeks instead of several weeks or several months. Three of the specialty boards have already agreed to this plan, and we expect that most if not all the others will join us also.

Assistance will be given in meeting the needs of the returning medical officers in the training programs being developed, and in some cases under operation in the Army and in the Navy and the Veterans Administration hospitals. As a result of these efforts we feel that there will be available by April 1 four to five thousand residencies for returning medical officers. This was about the number we thought we would need provided demobilization extended over a two year period. This number many thought would meet the needs of all the officers who are desirous of training, but even if we knew the war would terminate as rapidly as it did, even if we knew that, I doubt whether we could expand our residency facilities beyond the present expansion or beyond the expansion as of April 1, 1946 without some diluting of the services, so that in the end we would have a net loss rather than a gain in medical education at that level. "Do we need as many specialists as it apparently seems we are going to have if the veterans get their way?" We have gone on the assumption that we ought to expand these educational facilities as fully as we can without diluting them to meet the needs of as many qualified veterans as possible. We do not look on this expansion program as an emergency affair entirely. We feel that in many ways our educational program has been greatly improved by this stimulus, because more and more hospitals are collaborating with one another in their residency programs; more and more hospitals are collaborating or associating themselves with medical schools in carrying out this program. I feel that there will result a stronger residency program after the war than we had before the war and that we shall have additional places available after the war, used now by veterans but available shortly to our Latin American colleagues, for example, who will be coming to this country in greatly increasing numbers for advance medical training.

SURPLUS PROPERTY

Mr. Robert C. Ayers, Director of the War Property Distribution of the Federal Security Administration: When the Surplus Property Act was passed, it was passed before V-E day. It has not been amended since that time. It has been implemented both pro and con by regulations. It has gone through three changes of administration. Section 13 of the act provides that surplus property, useful for education and health, shall be sold or leased to education and health institutions and that in fixing the sale or lease price the benefit that has accrued to the United States or which will accrue to the United States may be taken into consideration. On Nov. 6, 1945 regulation 14 was passed to implement section 13 of the act. Mr. Symington, who was then the surplus property administrator, picked the Federal Security Agency as the certifying agency for health, education and welfare institutions and also fixed a 40 per cent discount from fair value as the purchase price of material for those two types of institutions. On the welfare side, then, they still buy at fair value. Today there are four categories of priorities within that act. The first and the top priority on all types of property is the federal government itself. The second priority goes to the state and local government; the third priority goes to veterans, and the fourth priority goes to nonprofit institutions. The returning veteran does not have at the present time much of a break as far as surplus property is concerned. He comes in now under the third priority. Almost everything up to now is what is termed in short supply. While the Army says that the floodgates of surplus property are now open and that the flow of it is going forward, experience teaches and shows us that when the federal government has satisfied its needs, and when the state and local governments have satisfied their needs, the veteran takes just about what is left over. There is at this time pending in the Congress of the United States a bill to make veterans the second priority, subject only to the federal government. While I am no forecaster at all of what Congress will do, my guess is that it will pass and make the veteran the No. 2 priority.

I suppose the reason the Federal Security Agency was asked to assume the responsibility of certifications on health, education and welfare institutions is that within the Federal Security Agency there are three constituent units: the U. S. Public Health Service, the United States Office of Education and the Social Security Board, which deal directly with the state departments of public welfare throughout the length and breadth of the nation. Therefore we have set up within the Public Health Service the Division of Surplus Property Utilization, and within the Office of Education a similar division, and within the Social Security Board a similar division. At the outset there was a Surplus Property Board, and the Department of Commerce was the main disposal agency; that lasted but a short time. Congress amended the act and made a single administrator, and then the Department of Commerce got tired of being the disposal agency and it was transferred to the Reconstruction Finance Corporation. Then Mr. Symington resigned and became an Undersecretary of War, and the RFC got tired of being a disposal agency; so the War Assets Corporation was formed, and there came into full bloom on February 1 a single agency, so to speak. General Gregory was appointed the chairman of the board of the War Assets Corporation and also the acting administrator of surplus property. At the same time the President by executive order transferred the Surplus Property Administration over to the office of the chairman of that board. Under his reorganization powers he is setting up on March 25 a single War Assets Agency, the reason being to try to bring it all, both the policy making feature and the actual operation feature, under one man who promulgates the policy.

Today we have in each of the eleven War Assets Consumers Goods offices a sanitary engineer on the public health side and a medical man. Today both of these men in each office are doctors. If you go down to 209 South La Salle Street you will find our people there. A health institution, be it a state, a local government or a nonprofit hospital health agency of that kind, when it makes its application and places its order for surplus property of any kind that it may need (and I have yet to see any surplus property that a hospital and health institution cannot use in some form or other) that application goes directly to the disposal agency where our people are located, and there the application is processed by our people. It is either approved or modified as the case may be, and the order is filled from the available property there. We started out with what appeared to be a beautiful plan. We thought we could stockpile, that we could build up some reserves and make a comprehensive survey of the hospital needs throughout the country and put this material into the places where the need was the greatest. But the pressure (and I am not saying it should not be) to get the property out into the channels where it is needed made us streamline our procedure to that extent. Undoubtedly we will find more streamlining necessary, with a similar plan for the educational field and for the welfare field. However, the welfare institutions as such are not entitled to the 40 per cent discount.

Before the Smaller Plants Corporation was sent out of existence, through the efforts of the Public Health Service at the central office in Washington an attempt was made to put a doctor, either a veteran or a nonveteran, in the class of a public health institution. I was one who supported that. The Smaller War Plants Corporation said no, that the Surplus Property Act meant an institution and not a person. It seemed to a group of us that one could certainly say that a doctor or a dentist was an institution, but we didn't get very far with it. We thought they were beginning to yield, and then finally with pressure from the veterans we were about to point to where we thought we were going to put it over as far as the veterans were concerned and then let the veterans buy under their priority with the Smaller War Plants Corporation, which would give them priority No. 1. But in the meantime the Smaller War Plants Corporation went out of existence, and we are right back with the veterans having a No. 3 priority and not being classed as an institution. There are many proposed amendments and many pressure groups that would like to see the veterans have a No. 2 priority, and in the case of a doctor and dentist they would be given the 40 per cent discount or whatever other discount may later on come about.

FURTHER DISCUSSION

DR. HENRY A. DAVIDSON, Trenton, N. J.: Would Mr. Ayers outline for us briefly and concretely just how a doctor veteran who has just taken off the cotton and put on blue serge, who needs a tuning fork which he cannot buy, goes about getting things? Where does he take himself, to what place, and what does he do to get the tuning fork from the army or navy surplus?

MR. AYERS: There are two methods the veteran doctor may employ: He takes his discharge papers or his terminal leave papers, or proof of the fact that he is a veteran, to the Smaller War Plants Corporation or to a disposal agency of the War Assets Corporation. I rather imagine all of the secretaries have the locations of those offices; if not, I will see that you are furnished with it. He is there granted a certificate stating that he has preference rights as a veteran to buy surplus government property, and it lists the kind and quantity of such property he wants to buy. Then he goes to the disposal agency; that is the War Assets Corporation, and after March 25 it will be the War Assets Administration. There are eleven of them throughout the country on consumer goods. There are some twenty-two of them today on capital goods. The thinking topside in the War Assets Corporation is that there will be one to every state. I guard my language there because today that is the thinking. I believe the thinking will get into full bloom, because an estimate was taken the other day of the amount of surplus property disposed of today and the amount estimated on hand, and at the rate they are going at the present time it would be some twenty-six and a half years before they could dispose of the surplus property. One other essential is to get on the mailing list of the War Assets Corporation. In that way you will receive listings of what is coming out, and where it is to be disposed of.

DR. DAVIDSON: How do we get on that?

MR. AYERS: By writing the War Assets Corporation.

CHAIRMAN BARKER: Dr. Fishbein, weren't those addresses published in THE JOURNAL?

DR. FISHBEIN: Within the last week, and also the letter telling them what their rights are.

MR. AYERS: Fine. The certificate from the Smaller War Plants Corporation gives you in effect a search warrant to go out and find the property and, if you can find it, get it.

DR. MICHAEL A. TIGHE, Lowell, Mass.: We in Massachusetts had an information bureau set up before the war was over, in anticipation of getting the thing into operation so that when the war did close we would have a good functioning outlet. We think we have a fairly good functioning outlet. Our medical society has established what we might call a series of circuit riders, who go out through the state visiting each section of the state—at least the plan for this year is to have them visit each section of the state—three times, spending two days in each section. The men who are participating in the instruction are the best men in our state, and in addition to that there will be in Boston, beginning next week and running until May, two exercises a week which will start at 4 o'clock in the afternoon, with a recess for dinner and then continuing in the evening. There again the leading medical men in our state are participating. Our three medical schools have established refresher courses of six months' length. All of this material is on file in our information bureau. One thing we seem to have had the most trouble with has been the location of men coming back from the service. We are an urban state, of course, and there is no great scarcity of doctors in our state. We have had to be extremely careful not to recommend an individual to go into a community which for the moment might be short of doctors and have him take the place of some veteran who shortly will return. Our second really serious problem was the matter touched on by Mr. Ayers. I have boys who have never practiced, who went directly from their internship into the Army. There are a lot of them. They come to my office after they have been to the information bureau, and they tell me their troubles, about their difficulty in getting an office, and so on. We can't do too much for them in that respect, but after a while they come back and say "I have found an office in the location in which I expect to practice. I can't find a darned thing to put in it. I have made the rounds of all these outfits that are supplying doctors' equipment." I had a boy say to me last week that they wanted $250 for a desk, $300 for an examining table and $75 for a sterilizer. "Where am I going to get all that money?" he asked. These boys say they were given to understand that the government has a lot of surplus material, and "when is it going to be opened up to the veteran doctor? We think we should have an opportunity to purchase some of it. Why can't we do so?" Some of the men have talked plainly to me. They have talked to me along the lines of the letter that was read by General Lull. They say "Are the commercial houses behind the movement to prevent this surplus property from being distributed?" I don't believe that is so, but that is what these boys are thinking. They have pressing needs; they have found an office, a location, but nothing to put in it.

Mr. Ayres: There are a number of things to prevent that boy from outfitting himself. For instance, here is a catalogue in my hand showing surgical instruments and other things Dr. Tighe was talking about. This catalogue gives the code numbers, the prices and so on. It is issued from the regional office of the Cincinnati War Assets Corporation. Apparently there is a large depot of that sort of material at Cincinnati. There is another large depot of the material that doctors and hospitals need at Denver. It is not scattered around over the nation. For instance, running my eyes down this page, I see sterilizers and things a doctor needs. The sale of that equipment closes to the priority group on February 13, and you have about fifteen days from the time it is opened to the veteran or to the doctor to place your order and get it. In many instances the veteran doctor does not want to buy it until he can inspect it.

Dr. Holman Taylor, Fort Worth, Texas: A doctor in Texas wanted to buy one of the hospitals. I couldn't find out to whom we should direct an inquiry as to the cost of that hospital; one day while I was trying to find out about it, my telephone rang and an agent of the Surplus Property people, right there in Forth Worth, rang me up to know about a doctor who wanted to buy that same property. The Brinkley outfit wanted to buy it. I think every state ought to have a list of people from whom they could find out about these things.

Mr. Ayers: In each one of these Consumer Goods offices there are two persons from the Public Health Service. One is a doctor and the other is a sanitary engineer. If you can make contact with these men I am sure they will see that you get on the mailing list.

Dr. R. B. Anderson, Fort Worth, Texas: I am not quite clear about this. If some information was published in The Journal a week ago and if it came from the same source that we got some from about the same time, it has already been changed.

Dr. Fishbein: I have been working with this question of surplus property disposal for about eight months. We were first called to a meeting in Washington, which Dr. Irons and I attended as representatives of the Board of Trustees, to consider the whole question as to how the Surplus Properties Act could be best administered for the advancement of the public health and for aiding physician veterans in getting back into practice. That conference met for a full day; some fine principles were agreed to by everybody concerned. Among other things it was agreed by the group in Washington who were in authority at the time that a complete set of office equipment might be assembled which would be leased to a returning veteran for $1 a year in case he went to an area in need of a physician, and that the U. S. Public Health Service would be the certifying agency to assure the government that that area was in need of a physician and that he was a qualified physician to move into such an area. After that meeting we heard nothing further about the matter for some time because Washington was in the process of removing one group and putting in an individual, as Mr. Ayers has already mentioned. After this the entire procedure changed and everything that was there decided on was canceled. Since that time, as Mr. Ayers has said, the procedure has changed almost as rapidly as a new procedure is developed. About ten days ago we received from the Surplus Property Administration the announcement of the offices which would have available the lists of property for disposal, and the regulations under which such property would be made available to nonprofit medical institutions and to physician veterans. That was the statement which we printed promptly in The Journal. It reached us on a Monday morning and we went to press that afternoon. On the next day a representative of the U. S. Public Health Service called on us to say that he was now in charge of this matter and that he was proposing to write for the benefit of the medical profession a communication which would give all the details as to how surplus property would be made available to physicians.

I said "We are printing that this week."

He said "I would like to see it."

I showed it to him and he said "I never heard of it. This must have come out since I left Washington."

"When did you leave Washington?"

"Day before yesterday."

It is rather futile to comment here on the chaos and confusion that have been associated with the disposal of surplus property. I think everybody in the country knows that it has not been well organized, that there has been no consistent policy, that there has been constant changing from one group to another in control. Obviously if the federal government were efficient in this matter and were really anxious to see to it that rural areas not at present served adequately by physicians could be served, they would try to do something definite and positive toward making office equipment and cars available to physicians who are willing to go into rural areas to practice. That was the intent of the law. That section of the law was written after innumerable conferences with the American Medical Association, the American Public Health Association, the American Hospital Association and every medical and welfare organization in the United States. That section of the law was designed to encourage a movement to send qualified physicians into rural areas by making it relatively easy for them to go into such areas and practice. The purpose and intent of the law as developed by Congress have been completely defeated by red tape.

Mr. Bryan: I was especially interested in what Dr. Fishbein had to say, because our experience in New York has been exactly along the same line. In fact, to save the time of the veterans we no longer suggest that they go to see the Small War Plants Corporation or any of its offsprings, because they would only be wasting their time. They have easily 16,000 applicants for every surplus car available. It has seemed to us that there is now just as much justification for the government to instal a system of car rationing, such as was in effect during the war, as there ever was during the war. Physicians need cars, and certainly, the government rates being what they are, we cannot expect that all the needs of the country can be taken care of adequately soon. I was asked by our veterans' group to raise this question here, if possible, and to inquire what the sense of this group might be toward proposing, through whatever means may be necessary, to the federal government that a system of car rationing be reestablished with priorities along the same lines as were granted during the war.

Dr. George Kosmak, New York: We do not get specific information about surplus property. The *New York State Journal of Medicine* has a very large circulation, and the only thing we can do is to reprint the information that has been contained in The Journal of the American Medical Association. Of course we are glad to do so. It seems to me that if all the editors of state journals could be supplied with this information it would do a great deal of good. I know that in our own state the people don't know where to go to get it.

Dr. Graham, Oklahoma: I should like to ask if we could have a little bit more description of the various items rather than simply the serial number. Many of the men will say "Here is a sterilizer, serial 00324. Who makes it?" If they do not have a medical supply catalogue they can't answer that question. If a better description could be given of the product it would save the men a lot of time. For instance, sometimes they are not interested in x-ray machines except those of a certain particular brand.

Mr. Ayers: That same complaint has been voiced before. In the listing that I have in my hand it shows the manufacturer's name. This is the first such listing I have seen. What that will do to help I am sure I don't know, but apparently that complaint has come in sufficiently strongly to get them to put it on the listing.

Mr. H. T. Sethman, Denver: I have a question for Dr. Johnson. Naturally, the Council on Medical Education and Hospitals, and hospitals subscribing to its policies, are endeavoring to raise standards of practice. However, during the war years a number of hospitals have changed their staff rules and they now admit to practice in those hospitals only men who are certified by the appropriate American boards. Men are now returning from service in the armed forces who are not yet certified but who may have been in the preparatory stages of getting certification at the time they went into service. These men are told that they can no longer bring patients into that hospital and that they must no longer consider themselves members of the staff. Several veteran physicians are quite wrought up about it, some even distinctly profane, and some are threatening court action under the G. I. Bill of Rights. Has the Council on Medical Education and Hospitals considered this problem, has it established a policy, and what is that policy?

Dr. Victor Johnson: The Council is aware of such situations in a number of parts of the country. Our attitude, however, has been that all we can prescribe for an approved hospital is that the staff be competent. Until the G. I. bill went into effect with the provisions to which you refer, the courts repeatedly decided that it is within the right of a hospital itself to determine who shall be on its staff. Before this particular problem arose relative problems had been presented to us before the war about staff appointments and discrimination against one or another group or individuals, and that has been left pretty largely as a local problem in which we are more or less powerless to interfere because of the fact that hospitals have the right, under the law, to appoint whomever they wish on their staffs. I think it would be very difficult for any central agency to do any more than to determine whether the staff is competent to carry on the work of the hospital. The question is broader than merely hospital appointments. It extends to memberships in county medical societies, where in certain areas of the United States men simply cannot get in even though the area is badly in need of a physician. The answer is that we are aware of the problem but we are not certain how it can be solved.

Medical Service for Veterans

Colonel James C. Harding, Director, Outpatient Service, Veterans Administration: This paper appeared in The Journal, February 16, page 415.

DISCUSSION

Dr. L. Fernald Foster, Secretary, Michigan State Medical Society, Lansing: I hoped that today I might be able to present some data as to the success of the plan, but because of difficulties in the provision of forms and in view of the fact that the Veterans Administration is moving from Dearborn to Detroit there has been a delay. The first cases are going through the Michigan Medical Service offices today. It was obvious that, having an active, well established medical service plan was the first factor, and with that was the fact that it had to be a solvent corporation. Under the plan of Michigan it is possible that it will be necessary for the plan to make advances in funds, particularly if the load gets heavy, and that will be a sizable amount of money. In that event it is necessary that the plan be solvent to the point where it can provide that advance. Fortunately the Michigan Medical Service plan is just that. The second factor which I believe facilitated the execution of this contract was the development and adoption of a uniform fee schedule for governmental agencies. I have here a few of the fee schedules. This fee schedule is called "the Michigan uniform fee schedule for governmental agencies."

In the depths of the last depression the traditional altruism of the medical profession was apparent. Physicians agreed to do work for agencies of government, particularly in the indigent categories, for what was recognized as cost. I believe we were told at that time that about 50 per cent of the regular schedule represented the cost of rendering medical care. Our council, with a considerable degree of vision, some time ago recognized the fact that possibly within the next five or ten years we could visualize a large segment of our people, and representing a similar segment of private practice, as falling into some governmental category. It has even been said that the veterans themselves, some twelve million, let us say, might develop in the next ten years, with their dependents, into government wards. If and when such dependents should become government wards this would develop a group of some forty or fifty million people. If that many people fell into some governmental category it was perfectly obvious that no sound economics would stand for you and me and any one else rendering care to one third of the population on the basis of the cost of production. Some time ago, anticipating this, our council appointed a committee to study the development of a uniform fee schedule for governmental agencies, not only indigent groups, but any governmental groups, such as the veterans' group, which is certainly not an indigent group. This committee developed a schedule from a survey of county medical society fee schedules from consultation with specialty groups throughout the state, from consultation with hospital staffs and from every conceivable angle from which it could determine a fee schedule. It surveyed some 35,000 items and has developed this fee schedule, which contains 500 units of service representing the usual services rendered.

The philosophy behind this uniform fee schedule for governmental agencies is simply this: It was recognized that the laborer is worthy of his hire and that medical service should and must have an intrinsic value of some kind, and the question was developed in our mind particularly by one of our state officials, who said that if the state of Michigan, for instance, chose to buy a ton and a half truck, all it had to do was to look into a price list and it could find therein some semblance of the value of a ton and a half truck; if it chose to use it at the county poorhouse it didn't get the truck for half price but paid the same price for it whether it was used at the county poorhouse or at the University of Michigan. From that suggestion we realized that to some lay people there was confusion from the fact that there was such a disparity between the value of medical services; in other words, this official said that in a state with eighty-three counties, such as we have, and fifty-five component county medical societies, there were just that many price lists, so to speak, when one chose to buy medical service, and the disparity between it ran from $16.50 for major surgery in one county to $62.50 in another county for indigent categories; so there must be something wrong, that medical service could not vary that much in its value. We believed there should be evolved a minimal fee schedule, based somewhat on the intrinsic value of the commodity, that could be rendered to any agency of government, from the county, state and national levels, and that fee schedule was developed and adopted by the house of delegates and was already in effect at the time the veterans' problem arose. This uniform fee schedule at present is being presented by county medical societies to boards of supervisors, to state agencies of government, and will be offered to any other national agency that has a category for whom it desires to purchase services. Already the Michigan Crippled Children's Commission has adopted this schedule in principle, limited only by statutes, which in the present law limits them to a top level on certain procedures, and at the next session of the legislature it is contemplated that changes will be made in the statutes so that they can adopt this in toto.

The social welfare commission of the state of Michigan is now considering this schedule, and has told us that its adoption looks hopeful. If you look at this schedule you will find that it is a fine schedule of general practice. You will find that in a state such as ours, which varies tremendously in its geographic layout, it is even higher than the private practice schedule in some of the small counties, but by and large it is an average which we believe represents to a certain extent the minimal value of medical care, and that it should be offered to every agency of government irrespective of whether the category is an indigent group or whether it is a group such as the veterans. We believe it is not a question of who gets the service as to what they pay; it is a question of somebody going to have to pay for it. If they are government wards, the value should not be lowered because of that fact Fortunately our Medical Service plan is the Michigan State Medical Society. Its corporate body is the house of delegates. Therefore a contract that has been developed with Michigan Medical Service is a contract with the practitioners of the state of Michigan. We believe, therefore, that the integration of this responsibility from Michigan Medical Service through the house of delegates down to the individual doctor places on him a tremendous responsibility for the execution of this contract. We believe the successful conduct of this contract is going to do one thing to which we are all pointing as an objective, and that is to prove that a governmental agency can utilize a voluntary plan in private enterprise and that it is not necessary to set up a great bureaucracy. We are impressing on the individual doctor down in the smallest hamlet of the state that this service to the veteran must be rendered and that it must be good; that he has to render it with the same efficiency he would to his regular clientele; that it has to be given cheerfully, efficiently and in a sufficient quantity such as the needs demand.

DISCUSSION

Dr. Stanley B. Weld, Hartford, Conn: I want to ask Colonel Harding a question, if I may. He mentioned the chief medical officer as being the one able to authorize the care of the veteran. I did not quite understand where the chief medical officer is Is he in the hospital or in the Veterans Administration?

Colonel Harding: The chief medical officer would be the chief medical officer of a regional office, that is, having the administrative job. However, he can delegate it all the way down the line to any physician in any subregional office or any place along the line from the regional office

Dr. Weld: In view of the statement Dr. Foster made about the American Legion and the Advisory Committee of Physicians, I wish General Lull would give us what information he has on the Advisory Committee for the American Legion.

General Lull: The Advisory Committee was appointed by Mr. Siberling. We were told that we would make recommendations to the commander for the use of the executive committee of the American Legion that had any bearing on health. We could make these recommendations to the national commander for the use of the executive committee. This committee was asked to make a recommendation about the Veterans Administration bill, which we did Dr. Stroud was interested in starting something for the prevention of rheumatic heart disease, so we asked the executive committee to give us a grant and to pay the grant to the American Heart Association for the study of rheumatic heart disease in children, as something that would be backed by the American Legion. The central committee asked the chairman of the Rehabilitation Committee in Washington to prepare letters for the commander's signature to send to all state commanders, requesting that the state commander appoint a medical officer on his staff to whom he could turn for advice, and in addition each state commander was to request that a surgeon be appointed on every legion post. We stressed the fact that these men should not be simply job holders but should be men in the community who were looked up to as physicians. We thought that in this way we could probably be of some benefit. We have had replies from most of the states saying that they have appointed some physician as the state surgeon. We checked up on these men and for the most part they are good men. We did not check as far down as the posts. We left that up to the state.

Chairman Barker: You are properly guarded in your remarks, General Lull, because Dr. Weld is the surgeon to the American Legion in the state of Connecticut. He is a job holder and a respected physician.

Dr. Wingate M. Johnson, Winston-Salem, N. C.: The executive committee of the North Carolina State Medical Society, meeting January 27, voted to accept the contract Michigan has with the Veterans Administration, to be administered by the Hospital Saving Association (that is the Blue Cross), which was the first Blue Cross plan of the country sponsored by a state medical society.

Mr. Graham (Oklahoma): In Oklahoma recently I had an opportunity to speak to Mr. Lundquist, head of the Veterans Administration. Subsequently I talked to Major P. B. Smith, and I was rather startled to find that they knew very little about this plan that had been proposed some months ago by General Hawley. They have given us their most hearty cooperation, and we will go further as soon as we return from this meeting. The only reason why I make this comment is that I wonder how many other state medical societies who perhaps in the immediate future are going into the investigation of like plans are likely to run into that same situation with local veterans' administrators.

Colonel Harding: We purposely have not disseminated any of this news as yet because it is a new idea and it has a lot of kinks to it. Now that we have two or three concrete types of plans, it is our intention to disseminate this and to put it through our branch offices, these thirteen area offices that are now being organized. We have a deputy administrator in each one of them, and I think we have a deputy chief medical officer in each one of them. I have been handling it myself, and when you realize that there are forty-eight states it takes me an awfully long time to get through.

(To be continued)

Coming Medical Meetings

Aero Medical Association, Chicago, April 7-9 Dr. David S. Brachman, 1016 Dime Building, Detroit 26, Secretary.

Alabama, Medical Association of the State of, Birmingham, April 16-18. Dr Douglas L. Cannon, 519 Dexter Ave, Montgomery 4, Secretary.

American Association of Anatomists, Cleveland, April 4-6. Dr Eliot R. Clark, University of Pennsylvania School of Medicine, Philadelphia 4, Secretary.

American Pediatric Society, Skytop, Pa, May 1-3. Dr. Hugh McCulloch, 325 N. Euclid Ave, St. Louis 8, Secretary.

American Society for Research in Psychosomatic Problems, New York, May 11-12. Dr. Edwin G. Zabriskie, 714 Madison Ave, New York 21, Secretary.

American Surgical Association, Hot Springs, Va, April 2-4 Dr. Warfield M Firor, Johns Hopkins Hospital, Baltimore 5, Secretary.

Arizona State Medical Association, Phoenix, May 2-3. Dr. Frank J Milloy, 112 N. Central Ave, Phoenix, Secretary.

Arkansas Medical Society, Little Rock, April 14-15. Dr. W. R. Brooksher, 602 Garrison Ave, Fort Smith, Secretary.

California Medical Association, Los Angeles, May 7-10. Dr George H. Kress, 450 Sutter St., San Francisco 8, Secretary.

Central States Dermatological Society, Detroit, April 27. Dr. Clarence E Reyner, Henry Ford Hospital, Detroit, Secretary.

Connecticut State Medical Society, Hartford, May 1-3. Dr. Creighton Barker, 258 Church St, New Haven 10, Secretary.

Dallas Southern Clinical Society, Dallas, Texas, March 18-21. Dr. John G. Young, 1719 Pacific Avenue, Dallas 1, Director of Clinics

Florida Medical Association, Jacksonville, April 22-24. Dr. Robert B. McIver, P. O Box 1018, Jacksonville, Secretary.

Georgia, Medical Association of, Macon, May 7-10 Dr. Edgar D. Shanks, 478 Peachtree St, N.E, Atlanta, Secretary.

Iowa State Medical Society, Des Moines, April 17-19. Dr. John C. Parsons, 406 Sixth Ave., Des Moines 9, Secretary.

Kansas Medical Society, Wichita, April 22-25. Dr. F. R. Croson, 112 W. Sixth St, Topeka, Secretary.

Louisiana State Medical Society, Alexandria, May 6-8 Dr. P. T. Talbot, 1430 Tulane Ave., New Orleans 13, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 23-24. Dr. W. Houston Toulson, 1211 Cathedral St, Baltimore 29, Secretary.

Medical Library Association, New Haven, Conn, March 25-27. Miss Frida Pliefke, 2000 Medical Arts Bldg, Minneapolis 2, Secretary.

Missouri State Medical Association, St Louis, March 24-26 Dr. Ralph L Thompson, 634 N. Grand Blvd, St. Louis 3, Secretary.

Nebraska State Medical Association, Lincoln, May 6-9. Dr. R. B. Adams, 416 Federal Securities Bldg., Lincoln 8, Secretary.

New Orleans Graduate Medical Assembly, New Orleans, April 1-4. Dr. Joseph S D'Antoni, 1430 Tulane Ave, New Orleans 13, Secretary.

New York, Medical Society of the State of, New York, April 29-May 3. Dr. Walter P. Anderton, 292 Madison Ave., New York 17, Secretary

North Carolina, Medical Society of the State of, Pinehurst, May 1-3. Dr. Roscoe D McMillan, P. O. Box 232, Red Springs, Secretary.

Ohio State Medical Association, Columbus, May 7-9. Mr. Charles S Nelson, 79 E. State St, Columbus, Executive Secretary.

Postgraduate Institute of the Philadelphia County Medical Society, Philadelphia, April 9-12. Dr. George P. Muller, 301 S. 21st St, Philadelphia, Director.

South Carolina Medical Association, Greenville, April 30-May 2. Dr. Julian P. Price, 105 W. Cheves St, Florence, Secretary.

Tennessee State Medical Association, Knoxville, April 9-11. Dr. W. M. Hardy, 706 Church Street, Nashville, Secretary.

Texas, State Medical Association of, Galveston, May 6-9. Dr. Holman Taylor, 1404 W. El Paso St., Fort Worth 3, Secretary.

Washington Letter

(From a Special Correspondent)

March 11, 1946.

Lack of Psychiatrists Called "Frightening"

Capt. Francis Braceland, head of the Navy's neuropsychiatric division, informed the Senate subcommittee considering the Pepper bill, which would set up and finance a National Neuropsychiatric Institute in Washington, that "a considerable block of America's civil population does not enjoy mental health." Leading army and civilian psychiatrists testified that there is a "frightening" lack of trained psychiatrists everywhere. Surg. Gen. Thomas Parran of the U. S. Public Health Service also testified in support of the bill. Dr. Lawrence Kuble, psychiatrist consultant to the Office of Scientific Research and Development, opposed the Pepper measure because he said it is inadequate, "like shooting at rocket bombs with a peashooter."

District Antivivisection Bill Losing Support

The Lemke bill to ban vivisection in the District of Columbia is making little headway. Federal Security Administrator Watson B. Miller has asked that the legislation forbidding medical research on dogs here be killed by the House District Committee. In a letter to Chairman John McMillan, Democrat of South Carolina, Mr. Miller warned that the measure would provide a precedent for antivivisectionists that would "seriously deter medical progress" elsewhere in the United States. He added that medical research on living animals has been invaluable in the search for benefits to man's life and health.

Opposition to Military Domination of Science

Dr. Edward U. Condon, director of the National Bureau of Standards, said here in a speech that "science simply cannot go forward under military domination," imposed because of the atom bomb. Simultaneously a fresh drive opened for enactment of the May bill on atomic energy policy in Congress. Among opponents was Representative Holified, Democrat of California, who issued a statement that "the current Canadian-Russian spy scare hysteria" did not afford sufficient grounds to "rejuvenate" atom legislation proposed by Chairman May, Democrat of Kentucky, of the House Military Affairs Committee.

Herbert Hoover to Survey European Food Needs

President Truman has appointed former President Herbert Hoover honorary chairman of a Famine Emergency Committee. Mr. Hoover will fly to Europe on March 15 along with Dr. F. R. Fitzgerald, food allocations officer of the Agriculture Department, and others, to check food requisitions submitted by various countries. Mr. Hoover carried out vast foreign relief programs in Europe after the war of 1914-1918. The United States will endeavor to supply food to war torn areas of Asia and Europe through economies effected by the President's voluntary food conservation program.

Hawley Puts Veterans Hospital on Twenty-Four Hour Day

Acting on complaints that medical care had been denied veterans "after business hours," Dr. Paul R. Hawley, chief medical director for the Veterans Administration, has ordered all veteran hospitals to maintain twenty-four hour medical service. The agency has launched a program to speed up repairs on veterans' artificial limbs.

Funds Asked to Modernize Bureau of Standards

President Truman has asked Congress for a million dollars to modernize the National Bureau of Standards. Acting Budget Director Paul H. Appleby said the present plant is in such bad repair that testing and research work cannot be conducted efficiently.

Suggestion that Doctors Instead of Goats Be Used in Atom Bomb Test

Representative William Lemke, Republican of Indiana, sponsor of the District antivivisection bill, was suggested by several of his fellow Congressmen, according to newspaper reports, as a possible candidate to substitute for goats in the forthcoming Navy atom bomb tests. The Southern Dairy Goat Owners and Breeders Association had protested the use of goats and suggested that Congressmen be used instead. Congressmen declined the honor but said that Mr. Lemke, as the leading animal lover in the House, might accept. "I'm pretty busy now," he is reported to have said. "Why don't they send some of those doctors who always want to cut up dogs?" he said. "This is their chance to see personally just how a living being reacts to this sort of thing." As an afterthought he told his interviewer that newspapermen should be used instead.

Outbreak of Q Fever Among Bethesda Research Workers

An outbreak of Q fever occurred among 26 laboratory workers of the Bethesda National Institute of Health. Dr. Charles Armstrong, chief of the contagious disease division of the National Institute of Health, said that they became infected by breathing the air in the building where Q fever research was being conducted. Those actually working on the disease apparently had developed immunity, because they stayed well. Washingtonians were told that there was no danger of an epidemic.

Treatment of Leprosy in Brazilian Colonies

Mrs. Dena Eunice Weaver of Rio de Janeiro, president of the Brazilian Federation of Societies for the Assistance of Lepers, is in Washington on a five months visit to the United States at the invitation of the Office of Inter-American Affairs. She will study operation and fund raising methods of such agencies as the National Tuberculosis Association and the National Foundation for Infantile Paralysis. She stated that her federation is now treating 17,000 leprous patients in thirty-six colonies in Brazil, which has an estimated 30,000.

Senate Approval of School Lunch Program

The Senate has passed a bill authorizing the federal government to contribute $100,000,000 annually to state operated free school lunch programs for needy children. The bill has been returned to the House, which approved a bill calling for just half this total last week. The Senate also authorized a maximum of $15,000,000 to assist states in providing lunch room facilities and nutrition education programs. This had been cut out of the House bill. An effort is now being made to create a compromise measure.

Army-Navy Merger Bill Redrafted

A revised Army-Navy merger bill providing for a single department of national defense under one secretary, but giving autonomy to the Army, Navy and Air Forces, has been completed by a Senate Military Affairs subcommittee. It will probably be returned to the full committee this week. The Navy is said to be still bitterly opposed to a merger. Any legislation adopted would naturally affect the medical departments of the armed services.

More Food, Medical Care, Urged for World's Children

Miss Katharine F. Lenroot, head of the Children's Bureau, United States Department of Labor, told the Congressional Club that 140 million persons in European countries are now living on 2,000 calories and another 100 million exist on 1,500 or less. Telling of her recent tour of Europe, she urged better food, and medical care for all children in the world. She warned that undernourished, ill clad children will not have the energy and stamina to build a permanent peace.

Benzene Hexachloride, Powerful Insecticide

Benzene hexachloride, an insecticide said to be seven times as effective against flies as DDT, has been described to Congress. The insecticide was disclosed to the House Appropriations Committee during hearings on the 1947 Agriculture Department Supply bill, which has gone to the House floor. The chemical is said to be effective against many insects not bothered by DDT and is extremely toxic to bees.

Medical Scientists to Observe Atom Bomb Tests

Planners of the Navy atom bomb test on Bikini Atoll this summer hope to have observers present from every scientific and technical field which might be affected by release of atomic energy, including medical scientists.

Pretrial Conference for Limb Manufacturers

Judge Bower Broadus of Oklahoma City held pretrial conferences last week with attorneys for most of the eighty-one artificial limb manufacturers and supply firms charged with violation of the Sherman Anti-Trust Act. The judge granted two weeks to the government to prepare documents to be introduced as evidence for authentication. Another week was granted to the defendants to examine documents.

Medical Service Prepayment Plan

The District of Columbia Medical Society has launched a prepayment medical care plan providing limited surgical and obstetric services in the hospital in return for monthly fees paid in advance. It was submitted to Washington physician-members for approval. It will be known as Medical Service of the District.

Venereal Disease Bill to Be Considered March 18

The bill introduced by Representative Bolton, Republican of Ohio, to fight prostitution and venereal disease by continuing activities of the Federal Security Agency's social protection division will be considered at hearings of a House Judiciary subcommittee on March 18.

Progress in Drive for Nurses' Memorial

Progress is reported in the drive to erect a nurses' center in Washington as a memorial to nurses who served during the war. Mrs. Norman Kirk, wife of the Surgeon General of the Army, is sponsor of the drive.

Medical Legislation

MEDICAL BILLS IN CONGRESS

Veterans Administration

Congressman Rogers, New York, has introduced H. R. 5685, to provide for the national health and productive power of the people of the United States by clarifying the laws pertaining to hospital treatment, medical care, domiciliary care and related services. The bill provides that any center, hospital, home or clinic, now or later under contract, control and jurisdiction of the Veterans Administration, War Department, Navy Department or Public Health Service shall be available for the admission of any veteran of any war, military occupation or military expedition since 1897, not dishonorably discharged, without regard to the nature or origin of his or her disease or disability. Prior to the construction of adequate facilities to take care of all veterans requiring hospitalization, the bill proposes, any veteran excluded because of lack of beds shall go to the private hospital of his choice, and the Veterans Administration will be authorized to pay the bill. A hospital building program is proposed involving an expenditure of $550,000,000 to construct 57,000 additional hospital beds. The President will be authorized also to establish six Diagnostic, Research and Proving Centers.

S. 1915, introduced by Senator Langer, North Dakota, provides that the United States Veterans Administration hospital in Fargo, N. D., shall be known as the Clarence Theodore Hoverson Memorial Hospital.

A bill introduced by Representative Fellows, Maine, H. R. 5660, proposes that the provisions of all laws administered by the Veterans Administration which extend benefits to any woman who served honorably as a nurse, chief nurse or superintendent of the Nurse Corps under contract with the United States for ninety days or more between April 21, 1898 and Feb. 2, 1901 be made to apply to any man who served honorably in any such capacity under contract with the United States for ninety days or more between such dates.

District of Columbia

Representative Murphy, Pennsylvania, has introduced H. R. 5650, providing that, notwithstanding any limitation relating to the time within which an application for licensure must be filed, the Commission on Licensure to Practice the Healing Art in the District of Columbia is directed to issue a license to practice the healing art to Dr. Peter Florey, Washington, District of Columbia, in accordance with the provisions of the first paragraph of section 24 of the Healing Arts Practice Act of 1928.

Miscellaneous

H. R. 5686, introduced by Representative Forand, Rhode Island, proposes to authorize so much as may be necessary to enable each state to furnish assistance to needy individuals and to render needed welfare services to recipients of public assistance. If a state plan so provides, medical care may be supplied to the needy individuals.

H. R. 5569, introduced by Representative Cole, New York, would direct the Secretary of the Navy to promulgate regulations providing for the reimbursement of persons in the naval service for the cost of emergency or necessary medical services, including hospital services and medicines, from civilian sources when the person receiving the service is in a duty status.

STATE LEGISLATION

California

Bill Enacted.—A. 88-X has become chapter 56 of the Laws of 1946. It provides for the creation of a State Advisory Council on Hospital Facilities and authorizes the Department of Public Health to make a survey of existing public and private hospitals and health centers in the state, to evaluate the sufficiency of such hospitals and health centers to supply the necessary physical facilities for furnishing adequate hospital, clinic and similar services to the people of the state and to make recommendations concerning additional facilities when necessary.

Kentucky

Bills Passed.—H. 87 passed the senate February 21. To amend the workmen's compensation act, it proposes to increase the number of persons on the medical committee of the workmen's compensation board from three to five and further proposes that such committee shall include at least one surgeon and one neurologist. H. 257 passed the Senate March 1. To amend the law relating to divorce, it proposes to authorize the granting of a divorce when one spouse has become permanently and incurably insane and has been confined in an asylum at least five years prior to filing the suit. In such action the court shall find from the testimony of two or more physicians competent in psychiatry that such insanity is permanently incurable.

Bill Enacted.—S. 56 was approved March 1. It amends the law relating to the practice of pharmacy by providing that applicants for a license to practice pharmacy must be citizens of the United States, must have graduated from a school or college of pharmacy recognized and approved by the Kentucky Board of Pharmacy and must submit proper affidavits showing a minimum of one year of experience in a retail pharmacy under the supervision of a registered pharmacist.

Massachusetts

Bill Passed.—H. 74 passed the House March 5. To amend the law relating to bacteriologic laboratories, it proposes to authorize the Department of Public Health to grant certificates of approval for laboratory tests on milk, food, eating utensils, water and sewerage in accordance with such rules and regulations as the department may establish.

Mississippi

Bills Introduced.—H. 699 proposes to authorize the State Board of Examiners to proceed by injunction to prohibit any person from practicing any profession licensed under the supervision of said board when such person is not duly licensed so to practice. H. 712 proposes to provide for the incorporation of medical, surgical and other corporations organized for improving the physical, mental and moral condition of mankind.

Bills Passed.—H. 72 passed the House February 20. It proposes the creation of a four year medical school as a department of the University of Mississippi which shall be operated as a class A medical school in accordance with the "Council of Medical Education" of the American Medical Association. H. 430 passed the House February 26. It proposes the creation of a Mississippi commission on hospital care to set up and administer a statewide plan for the construction, equipping and maintenance of hospitals, nurses' homes, health centers, clinics and related facilities and in conjunction therewith prepare a statewide hospital plan and to conduct all necessary studies and surveys incident to developing such a statewide hospital plan. H. 431 passed the House February 27. It proposes the creation of a state medical education board to receive and pass on applications for loans or scholarships made by students who are residents of the state and who desire to become physicians. The purpose of such loans will be to enable the applicants to obtain a standard four year medical education which will qualify them to become licensed, practicing physicians and surgeons in the state.

Bill Enacted.—H. 388 was approved March 4. It provides an appropriation to the state board of health for conducting a program of eradication and control of syphilis and other venereal diseases.

New Jersey

Bills Introduced.—A. 183 proposes the creation of a board of naturopathic examiners and defines naturopathy to be "that system of the healing arts which means 'nature cure or health by natural means' and is defined as the prevention, diagnosis and treatment of human ailments and diseases by means of any one or more of the psychological, physical or mechanical, chemical or material forces of nature, excluding drugs, surgery or other artificial measures." The proposal would authorize the naturopathic licentiate "to practice naturopathy within this state and to that end shall have the authority to examine patients, diagnose and treat by natural agencies any disease, pain, injury, deficiency, deformity, ailment or physical or mental condition and to prescribe and regulate the patient's dietary, sanitary and hygienic requirements; also use the x-ray and any other instrument for the purpose of diagnosing, analyzing and determining the patient's ailment . . . ; also shall have the right and privilege to sign all certificates, as is granted to practitioners of other branches of the healing arts, as well as in all matters pertaining to public health welfare and to have the right to employ nurses and to employ the aid of assistants." S. 120 proposes the establishment of a diagnostic center to be fully equipped with all modern scientific equipment and provided with a staff of competent specialists in the field of medicine, psychiatry and psychology, to the end that full and complete diagnostic services shall be available to any governmental agency desiring to secure a complete diagnosis of any individual having need for such services.

New York

Bills Introduced.—A. 1795 and S. 1542, to amend the education law, propose a number of amendments to the law relating to the practice of pharmacy. A. 1959 and S. 1651, to amend the education law, propose the granting of state aid to assure provision for diagnosis, treatment and supervision of physically handicapped children, defined as children under 21 years of age who by reason of a physical defect or infirmity, whether congenital or acquired by accident, injury or disease, are or may be expected to be totally or partially incapacitated for education or for remunerative occupation. A. 1973 and S. 1773, to amend the state licensing law, propose that persons lawfully inducted into the military service who were licentiates under the state law at the time of their induction may apply for a renewal of their license within three months of discharge from the service or within three months of discharge from any period of hospitalization in a facility maintained by the United States Veterans Administration. A. 1974 and S. 1772, to amend the state licensing law, propose to postpone from July 1946 to July 1947 the time during which previous licentiates whose license lapsed during military service may have a renewal license without examination. A. 1985 and S. 1709, relating to licensed professions, propose that any person who was eligible at the time of his induction to obtain a license to practice a healing art shall not be required to meet qualifications additional to those existing at the time of his induction. A. 1995, to amend the education law, proposes to authorize the department to issue a license to practice medicine to any person otherwise qualified therefor who shall, within one year from the date of this law, give satisfactory evidence to the department (*a*) of fitness as to age, character, preliminary and medical education and qualifications, (*b*) that he has successfully passed the examinations required by or pursuant to this chapter in all but one of the subjects specified therein, (*c*) that he has served for a period of more than three years in the armed forces of the United States in time of war and that he was a resident of the state prior to his enlistment or induction, and (*d*) that he was prevented from taking a reexamination in the subject in which he failed to attain a passing grade by reason of such enlistment or induction. A. 2000, to amend the workmen's compensation law, proposes that no claim for services in connection with any separate, lay-owned x-ray laboratory, medical bureau or other laboratory shall be valid and enforceable unless such laboratory or bureau has obtained a license from the chairman of the workmen's compensation board. A. 2020 and S. 1695, to amend the education law, propose to redefine a podiatrist as one "who holds himself out as being able to diagnose, treat, operate or prescribe for any disease, pain, injury, deficiency, deformity or physical condition of the human feet, and who shall either offer or undertake by any means or method to diagnose, treat, operate or prescribe for any disease, pain, injury, deficiency, deformity or physical condition of the same within the following limitations: operations on the feet shall be limited to minor surgery; and the use of anesthesia shall be limited to local anesthetics." A. 2076 and S. 1751 propose that every common carrier, railroad, street railroad and omnibus line carrying passengers for hire shall carry a first aid kit for the convenience of the passengers should an emergency arise for such use. A. 2083 proposes to extend the life of the temporary state commission previously appointed to formulate a long-range health program from March 1946 to March 1947. A. 2140 proposes to authorize qualified dentists or qualified dental assistants to use general anesthetics in the care and treatment of dental patients but would require all such persons to have at their disposal at the time of administering any general anesthesia such necessary drugs, medicines and equipment for resuscitation as the board of dental examiners shall prescribe. A. 2157, to amend the workmen's compensation law, proposes that fees for medical services allowable thereunder shall include roentgenology, physical therapy, pathology and anesthesiology. S. 1572 proposes the creation of a state board of examiners in massage and defines massage as "treating the human body for hygienic or remedial purposes by stroking, kneading, tapping or rolling with the hands or with other instrumentalities for the purpose of relieving, alleviating or reducing affected parts thereof but shall not include reduction of a fracture or dislocation of a bone." The practice of massage is declared to be distinct from the practice of medicine, surgery, osteopathy or chiropody. S. 1626, to amend the public health law, proposes the creation of a board of nutrition control to consist of five members, of which at least one shall be a licensed doctor of medicine. S. 1797, to amend the workmen's compensation law, proposes that physician members of the industrial council shall not be eligible for authorization to render medical care under the act and shall not examine, treat, consult or in any other way care for a compensation claimant either at the request of such claimant or of a carrier. S. 1904 proposes the creation of a temporary state commission to make a survey and study of the social, educational and physical problems of individuals afflicted with cerebral palsy with the view and purpose of devising and recommending a program for the aid, care, treatment and rehabilitation of such persons.

Bills Passed.—A. 896 passed the senate March 4. To amend the law relating to the practice of optometry, it proposes that applicants must be citizens of the United States or must have declared an intention of becoming such. A. 898 passed the senate March 4. To amend the law relating to the practice of podiatry, it proposes that applicants must be citizens of the United States or must have declared an intention of becoming such. A. 899 passed the senate March 4. To amend the law relating to the practice of dental hygiene, it proposes that applicants must be citizens of the United States or must have declared an intention of becoming such. S. 577 passed the senate February 26. To amend the workmen's compensation law, it proposes that physician members of the industrial council shall not be eligible for authorization to render medical aid under the workmen's compensation law and shall not examine, treat, consult or in any other way care for a compensation claimant at the request either of the claimant or of a carrier. S. 1189 passed the senate February 25. To amend the law relating to live pathogenic micro-organisms or viruses, it proposes that persons cultivating or possessing live pathogenic micro-organisms of viruses must satisfy the commissioner of health that such organisms or viruses will not become a menace to the public health and shall register with the commissioner of health The registration must be renewed each year. S. 1354 passed the senate March 4. To amend the law relating to nonprofit medical and hospital service corporations, it proposes to authorize the creation of dental expense indemnity service plans. Dental expense indemnity would consist in reimbursement for dental care provided through duly licensed dentists and in furnishing necessary appliances, drugs, medicines and supplies, prosthetic appliances, orthodontic appliances, precious metal and ceramic restorations.

Rhode Island

Bill Introduced.—H. 749 proposes the creation of a Rhode Island Cancer Commission to establish a hospital to be known as the state cancer hospital. Such hospital would be required to conform with all the rules and requirements of the American College of Surgeons for the standardization of cancer hospitals, including the necessary radium and x-ray equipment for the best treatment of patients afflicted with malignant disease.

South Carolina

Bills Introduced.—H. 1143 proposes an appropriation for the establishment and equipping of a hospital to be erected in Charleston as a part of the medical college of South Carolina and for such other facilities for providing medical training at the medical college as may be considered necessary and advisable by the board of trustees. H. 1157 proposes that no person or combination of persons shall practice or attempt to practice as a dental laboratory technician without a certificate or registration either as a registered apprentice or as a registered dental laboratory technician issued pursuant to the provisions of this act by the state board of dental examiners. The practice of a dental laboratory technician is described as "the fabrication of prosthetic dental appliances, such as the using of gold, other metals or combination of metals, plastics, porcelains, artificial teeth or other materials in the manufacture of appliances worn in the oral cavity, replacing teeth and tissue or worn on or around the teeth."

Virginia

Bills Passed.—H. 257 passed the House February 27. It proposes that any person who has tuberculosis in a communicable form who, having been instructed in writing by the local board of health, department of health or health officer or superintendent of any sanatorium of the state to take precautions to protect the members of his household and the public from being infected by tuberculosis communicated by such person, wilfully refuses to follow such instructions shall be guilty of a misdemeanor. H. 289 passed the senate March 1. It proposes to require persons dealing in the handling and processing of food for human consumption to submit each six months a certificate from a physician duly licensed for that purpose by the State Board of Health, certifying that such person has been examined and found free from any contagious or infectious disease. S. J. R. 20 passed the senate March 4. It proposes the creation of a commission to make a thorough and complete study of problems related to hospital and medical care, including the need of hospitals and health centers in the state, adequate plans for the prepayment of hospital and medical care for all classes of citizens, with due emphasis on the special needs of rural people, and other items related to the health and medical care of the citizens of the state. S. 21 passed the senate March 4. It proposes that the state board of health be authorized to initiate and administer a program of hospital treatment and care for indigent persons residing in the state. S. 149 passed the house March 4. It proposes the creation of hospital authorities to engage in hospital construction, maintenance and operation. S. 237 passed the senate March 1. It proposes the creation of an examining board for the certification of clinical psychologists.

Council on Medical Service and Public Relations

Charles H. Coghlan Assists in Organization of Ohio Plan

Charles H. Coghlan, who has been assistant director of Michigan Medical Service, has been named director of the Ohio Medical Indemnity Company in Columbus.

Coghlan has been in Ohio since the middle of August, assisting in the organization of the Ohio medical plan. Announcement has now been made of his appointment as chief executive of the Ohio Medical Indemnity with the title of executive vice president.

With Michigan Medical Service practically from its inception in 1940, Coghlan has been largely responsible for its growth. He is well versed in the operating problems and technics of medical plans and understands the medical profession's point of view.

The home office of Ohio Medical Indemnity will be in Columbus. Blue Cross plans throughout the state will handle the routine operating procedures.

Federal versus Voluntary Health Insurance: A Statement of the New Castle (Del.) County Medical Society

The New Castle County Medical Society feels that a public statement clarifying its attitude on the important subject of costs of adequate medical care is timely and will be helpful to the community. The members of the New Castle County Medical Society are acutely aware of the desirability of easing the burden of expense from unexpected illness in the American family, particularly in the middle and low income groups, and the need for further extending the benefits of preventive medicine for the preservation of the health of the nation. It is known that the quality and availability of medical and hospital care in the United States are better than those of any other country. Such medical advancement has necessarily brought about certain increased costs. In New Castle County and in the state of Delaware, as in the country as a whole, a lowering of costs which is compatible with a continuing improvement in the quality of the medical care should be sought.

This society is strongly in favor of voluntary indemnity health insurance plans. It is opposed to any federal control of medicine which will permit, directly or indirectly, domination of medical service by a governmental bureau. Such control has been proposed from time to time and has been called "socialized medicine." This society is in accord with the principles laid down by the House of Delegates of the American Medical Association and we therefore approve the following:

"The allotment of such funds as the Congress may make available to any state in actual need for the prevention of disease, the promotion of health and the care of the sick on proof of such needs.

"The principle that the care of the public health and the provision of medical service to the sick is primarily a local responsibility.

"The continued development of the private practice of medicine subject to such changes as may be necessary to maintain the quality of medical services and to increase their availability."

It is our opinion that federal compulsory health insurance now under consideration in Congress is contrary to these principles and that passage of such legislation will result in increased total costs of medical care, will disturb the age old confidential relationship between the patient and his doctor, will encourage political and bureaucratic control of medicine and eventually will impair rather than improve the quality of medical care received by the citizens of this nation.

From long experience in furnishing medical service both physicians and hospitals know well the reluctance with which a large portion of our population accept such service, even when it is critically needed and no costs devolve on the recipient. This reluctance to accept medical service can be changed only through a widespread and better understanding of the potential contribution of medicine to the preservation of health. This large group of citizens will not immediately accept medical services whether offered voluntarily or extended to them by federal law. Any system will and should fail of its purpose if forced on them. Only by convincing them of the merits of health insurance, and gaining their voluntary acceptance, can insurance succeed. This procedure is being followed now by the voluntary indemnity plans as vigorously as the population is willing to receive it.

In the opinion of the members of the New Castle County Medical Society the best solution to the problem of spreading the costs of medical care and increasing its availability to all persons in Delaware at the present time and under our democratic form of government is through the furtherance of voluntary health insurance plans. Such a plan was approved by this society and has been in operation since 1943. Already 60,000 persons, one fourth of the people of Delaware, are enrolled. By paying a small premium, the subscriber to the plan makes available a specific sum of money to pay on the cost of each specified operation. The amount may or may not equal the surgeon's fee for a particular operation, and if it does not the additional expense is a matter for individual arrangement between the patient and the physician. This plan has thus far been successful with this group. It should be expanded to give wider coverage against the costs of unexpected and untimely illness.

With further experience and with greater interest of the community in medical costs, the voluntary indemnity plan will succeed in accomplishing the desired ends, which are (*a*) to make medical care in Delaware available to all groups, (*b*) to improve the quality of such care and (*c*) to lower its cost. Similar types of service are in operation the country over. Such a plan retains the doctor-patient relationship, whereby the patient can choose any physician he wishes by his own volition and without bureaucratic control. The plan can be adjusted to meet local needs more readily than any federal compulsory plan. The plan is already in operation, and it seems desirable to give it an earnest, vigorous, patient and fair trial. We recommend that this subject be investigated by all interested citizens.

THE STATUS OF THE ENGLISH DOCTOR

In THE JOURNAL, January 26, page 226, appears a statement credited to Capt. Paul K. Maloney, M. C., A. U. S., entitled "The Status of the English Doctor." As was subsequently pointed out, this article was actually written by Major Clifford L. Graves to Captain Maloney. A letter from Dr. Charles Hill, secretary of the British Medical Association, has now been received in which he emphasizes some inaccuracies and misleading statements which are said to be present in the article. The letter follows:

Dear Sir:—My attention has been drawn to the article in your issue of the 26th January 1946 entitled "The Status of the English Doctor," by Captain Paul K. Maloney.

The article contains so many inaccuracies and misleading statements and gives such a false impression of National Health Insurance in Great Britain that I cannot let it pass without protest. It is quite obvious that Captain Maloney has entirely misunderstood the British scheme: both his facts and his inferences are wrong. In almost every line there is some statement that could be challenged, but if I am not to trespass on your space I must select for comment only a few of the more glaring errors.

Captain Maloney's statements about the financial arrangements of the scheme illustrate how misinformed he is and how many mistakes he can pack into a short paragraph. He says that the individual's contribution is 1/7d. a week, of which the employer pays 10d. and the employee 9d. Actually, the sum of 1/7d. a week is the contribution paid by a woman for both National Health Insurance and contributory pension. The combined contribution for a man is 2/-, but his weekly contribution to National Health Insurance alone is 11d. only. It is not true that an additional 3d. a week has to be paid to secure "a very small sickness benefit." Sickness benefit, that is, a cash benefit, is covered by the man's contribution of 11d. The sickness benefit is not 10/- a week, as Captain Maloney states, but 18/- for a man and 15/- for an unmarried woman. He speaks of shopkeepers and pensioners paying 1/5d. a week, but in fact, employers, self-employed persons and pensioners are not included in the National Health Insurance scheme at all.

Then Captain Maloney makes the astonishing statement that 84 per cent of the funds of the scheme is allocated for administrative charges and 12.5 per cent for the doctors' remuneration and warns his readers that this is what may be expected from a national scheme. The amount absorbed in administrative expenses is actually a little over 17 per cent. Captain Maloney has forgotten to make allowance for the payment of sickness benefit, disablement allowance, maternity grant and other benefits. Moreover, the fund does not collect 82/- a year from each insured person. The total contribution of an insured man, his employer and the state amounts to 55/7d. a year.

Captain Maloney asserts that well over 90 per cent of the population is insured under the scheme. The correct figure is about 45 per cent. The dependents of insured persons are not included in the scheme.

The paragraph on the Approved Societies is completely inaccurate.

Captain Maloney's impression of the status of the insurance practitioner is not true to experience. There is no frequent or regular inspection of doctors' records. It is one of the many duties of the small number of Ministry of Health regional medical officers to call on doctors from time to time and satisfy themselves that proper medical records are being kept. The imposition of a penalty is a rare occurrence. During the last year for which statistics are available only 2 out of 20,000 insurance doctors were fined for failing to keep proper medical records, and the fines in these cases were quite small. Captain Maloney's picture of the doctor as the helpless victim of disgruntled patients is unfair. The doctors themselves generally approve the machinery for dealing with complaints against insurance practitioners, and there is full opportunity of appeal.

Captain Maloney makes much of the alleged limitation of the doctor's authority to prescribe drugs. It is not true that he may not prescribe expensive drugs. He may and does prescribe whatever drugs the patient's condition may require. Avoidance of extravagance is all that is asked, and one cannot, surely, object to that. Captain Maloney is inaccurate in his instances. The injection treatment of hemorrhoids has for long been regarded here as within the general practitioner's range of service. The particular case of alleged excessive prescribing quoted by Captain Maloney was not "investigated by Parliament" and, in fact, half the penalty and costs were remitted after enquiry.

And so I could go on, but I think I have said enough to show that no credence should be given to Captain Maloney's presentation of the British National Health Insurance scheme. We know that the system is by no means perfect and that it has some serious defects, more especially the absence of provision for the dependents of insured persons and the exclusion of consultant and specialist treatment. But on the whole, and so far as it goes, it is a good scheme and works well, and British doctors have a right to expect that when a writer takes it upon himself to describe the scheme to the profession in another country he will make some effort to verify his facts.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education and public health.)

GEORGIA

Ophthalmologic Seminar Honors One Hundredth Anniversary of Abner Calhoun.—Emory University will celebrate, April 4-6, the one hundredth anniversary of the birth of Dr. Abner Wellborn Calhoun, born April 16, 1845, died Aug. 21, 1910, the first professor of ophthalmology of the Atlanta Medical College. Among the speakers in a seminar will be:

Dr. Frank B. Walsh, Baltimore, Myasthenia Gravis.
Dr. Parker Heath, Detroit, Ocular Therapeutics in Glaucoma.
Dr. John H. Dunnington, New York, Surgical Treatment of the Vertical Deviations.
Dr. Walter I. Little, Philadelphia, The Clinical Diagnosis of Retrobulbar Neuritis.
Dr. William L. Benedict, Rochester, Minn., Preparation of the Patient for Cataract Operation.
Dr. Derrick T. Vail Jr., Chicago, The Circulation of the Optic Nerve and Its Influence on Disease.

A feature of the anniversary celebration will be the dedication of the main auditorium of the new Academy of Medicine to the memory of Dr. Calhoun. A portrait will be unveiled and presented to the academy.

ILLINOIS

Eldred Thiehoff Directs Peoria Health Unit.—Dr. Eldred V. Thiehoff, Lansing, recently director of the bureau of local health service, Michigan State Department of Health, has been appointed health commissioner of Peoria, succeeding the late Dr. Sumner N. Miller. Pending the permanent appointment as commissioner, Major George P. Gannon, U. S. Public Health Service, has been acting commissioner. He will remain with the health department to be in charge of the venereal disease program.

Chicago

Personal.—Dr. Walter G. Maddock, associate professor of surgery at the University of Michigan Medical School, Ann Arbor, has accepted a similar position at Northwestern University Medical School.

The Kretschmer Memorial Lecture.—The fifth Edwin R. Kretschmer Memorial Lecture will be delivered on April 26 at the Palmer House by Dr. Charles A. Doan, dean and director of medical research, Ohio State University College of Medicine, Columbus, on "Marrow Hematopoiesis (Synthetic Folic Acid) and Splenic Hematopenia: Experimental and Clinical Studies."

George Whitecotton Goes to California.—Dr. George O. Whitecotton, superintendent of the University of Chicago Clinics for the past seven years, has been appointed medical director of the Alameda County Institutions, Oakland, Calif., to succeed the late Dr. Benjamin W. Black. In addition to his activities as medical director of all county institutions, Dr. Whitecotton will serve as superintendent of the 500 bed Highland-Alameda County Hospital, Oakland, where he spent the years 1932-1936 as intern, senior resident and administrative assistant.

Dr. Huggins to Stay on University of Chicago Staff.—Dr. Charles B. Huggins, professor of surgery (urology) and head of the department of urology, University of Chicago School of Medicine, said on March 7 that he had reconsidered and withdrawn his acceptance of an offer to become director of the Brady urology clinic at Johns Hopkins University School of Medicine, Baltimore (The Journal, January 26, p. 234). Dr. Huggins said that acceptance of the offer would interfere with his research, which, he added, was incomplete and "in a confidential stage."

IOWA

Editorial Board.—An editorial board has been set up for the *Journal of the Iowa State Medical Association* to aid the editor, Everett M. George, Des Moines. The board consists of John W. Dulin, Iowa City; Horace M. Korns, Dubuque, and Ernest E. Shaw, Indianola.

MINNESOTA

Examination for Venereal Disease Control Position.—The Civil Service Commission of the City of Minneapolis announces a civil service examination to fill the position as director, venereal disease control, for the city of Minneapolis. Because the time is limited, persons wishing information concerning the position should write directly to Mrs. Florence R. Dwyer, acting secretary and chief examiner, city of Minneapolis, Civil Service Commission, 109 City Hall, Minneapolis. The beginning salary will be $5,000; applications will close April 30.

New Professor of Psychiatry.—Dr. Donald W. Hastings, former chief psychiatrist of the Eighth Air Force in England and later chief air force psychiatrist in Washington, has been appointed by the University of Minnesota Medical School Board of Regents, Minneapolis, as professor and head of the department of neuropsychiatry in the medical school, effective March 16. Dr. Hastings will fill the vacancy left by the illness and resignation of Dr. John C. McKinley. Since his release from the army in August 1945, Dr. Hastings has served as professor of psychiatry at the Women's Medical College of Pennsylvania, Philadelphia. He graduated at the University of Wisconsin Medical School, Madison, in 1934.

Course for Physical Therapy Technicians.—The section on physical medicine of the Mayo Clinic, Rochester, plans to offer noncredit three months graduate or refresher courses, beginning July 1. The course will be offered without tuition and will be limited to twenty students, who will be taken only from regular courses for physical therapy technicians which have been approved by the Council on Medical Education and Hospitals of the American Medical Association. A second graduate course is planned to start October 1. These refresher courses are intended to supplant the regular emergency course for the training of physical therapy technicians, which will be discontinued July 1, when the present class completes its training (The Journal, Sept. 15, 1945, p. 222).

MISSISSIPPI

Dr. Pankratz Named Acting Dean at Mississippi; Other Changes.—Dr. David S. Pankratz, professor of anatomy, University of Mississippi School of Medicine, University, since 1939, has been made acting dean. He succeeds Dr. Billy S. Guyton, who has been acting dean since the resignation of Dr. James B. Looper in June 1945. Dr. Guyton resigned on February 18 to become dean emeritus and professor of surgery. Dr. Pankratz has been assistant dean and chairman of the department of anatomy since June 1945. Other changes in the faculty include the promotion of Ray J. Nichols, Ph.D., associate professor of anatomy, to professor of microanatomy; the appointment of Dr. Marcus E. Norrison as assistant professor of pathology, bacteriology and clinical laboratory diagnosis; the appointment of George P. Blundell, Ph.D., acting assistant professor of pathology and bacteriology, and the appointment of Dr. William T. Tyson Jr., recently released from the army, as acting associate professor of pathology, filling the vacancy that occurred when Dr. Robert M. Moore resigned in June 1945.

NEBRASKA

Dr. Selby Resigns as State Health Officer.—Dr. Claude A. Selby, state director of health since November 1942, resigned, effective January 31. Dr. Selby had been in private practice in North Platte when he entered the state service. He is a former president of the Nebraska State Medical Association. Dr. Wallace S. Petty, Lincoln, director of the divisions of local health services and communicable disease control, was named director of health. Dr. Petty has been a member of the Nebraska State Board of Health since January 1942. Dr. Roland H. Loder, Lincoln, director of the division of maternal and child health, is on leave at the University of Michigan Medical School, Ann Arbor, where he is completing work for his M.P.H. degree. Dr. Donald M. Alderson, Lincoln, assistant director, will be in charge during Dr. Loder's absence.

NEW JERSEY

Hospitals Cooperate in Plans for Medical Center.—The New Jersey Orthopaedic and Orange Memorial Hospitals, Orange, will be consolidated in a plan to establish a medical center serving the whole northern New Jersey area. The projected medical center will include an $800,000 building for New Jersey Orthopaedic to be built o [illegible] ange Memorial. The present New Jersey [illegible] will then be converted into a hospital for convalescent patients, filling a long felt need for the entire northern New Jersey territory. The new convalescent hospital will operate as a separate agency, and the Memorial and Orthopaedic hospitals will retain separate identities, though they will occupy adjacent buildings and work closely together. A joint committee representing hospitals and other health and welfare agencies plans to undertake a campaign for $1,500,000 to implement the program.

NEW YORK

Stockton Kimball Named Acting Dean at Buffalo.—Dr. Stockton Kimball, Buffalo, on February 28 was appointed acting dean of the University of Buffalo School of Medicine. Dr. Edward W. Koch, dean for sixteen years, died February 9. Dr. Kimball graduated at Buffalo in 1929. He was appointed instructor in medicine and pharmacology in the medical school in 1935, later promoted to associate and in July 1944 made assistant dean.

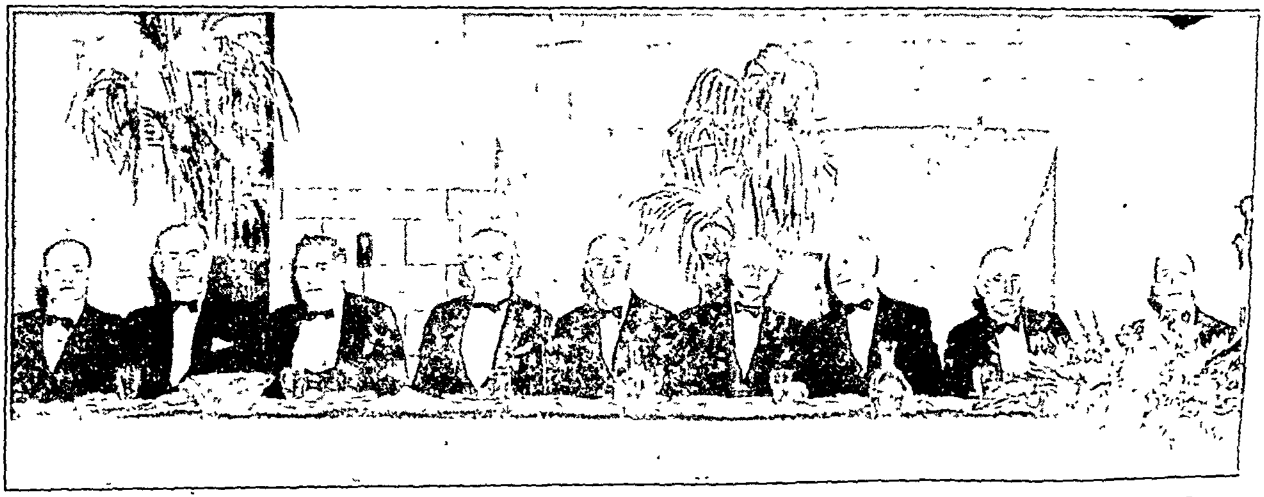
Bill Proposes to Honor Roswell Park.—A bill (S. 341) pending in the current state legislature proposes to change the name of the State Institute for the Study of Malignant Diseases to the Roswell Park Memorial Institute. One of the reasons for the change is that it has been found that many persons are deterred from seeking treatment at the institute because of the word "malignant" in its title, and physicians have been reluctant to send persons there because they did not wish to frighten their patients when they suspected a diagnosis of malignant disease but were uncertain. Another reason is the wish to honor Dr. Roswell Park, who, while professor of surgery at the University of Buffalo School of Medicine, was influential in obtaining an appropriation from the state to establish what was known as the New York State Pathological Laboratory of the University of Buffalo in 1898, becoming its first director. In 1902 the name was changed to the Cancer Institute of the New York State Board of Health, and Dr. Park continued as director. In 1904 he retired as director and became the chairman of the board of trustees, which position he retained, both while the institute was under its latter name and after it became the State Institute for the Study of Malignant Diseases, until his death in 1914.

Millions Asked for Health.—In a special message to the legislature Governor Thomas Dewey recommended March 4 that the state embark on a greatly enlarged health improvement program costing $14,000,000 a year as compared with the present $3,000,000, according to the New York *Times*. One of the main goals set is the elimination of tuberculosis within twenty years under a "master plan." The program is based on the findings of a special interdepartmental committee headed by Dr. Edward S. Godfrey Jr., commissioner of health, which has been studying the subject since last summer. Besides the intensified fight against tuberculosis, the governor called for additional state financial assistance to local health departments and expansion of their services, inauguration of a recruitment and training program for physicians and nurses in the public health field, establishment of an interdepartmental health council and development of new public health programs. The message outlined a four point plan of attack on tuberculosis that included payment by the state of half the cost of hospitalizing victims, abolition of the means test for admission to approved public sanatoriums and hospitals, inauguration of an intensive case-finding method through mass x-ray examinations and participation by the state in research into the prevention and care of tuberculosis. In a discussion of the fifth point of his broader health program, the governor indicated that state assistance would be supplied for health services in parochial and private schools as well as in the public school system. "It makes little sense to provide adequate health services for children of school age through the public school and, on the other hand, to neglect the children who attend schools other than the public schools," he stated. Most of the additional cost of the enlarged program represents new state assistance to municipal and county health and hospital departments. Of the $11,000,000 increase contemplated, about $5,800,000 would go to New York City. Of this $3,000,000 would be for hospitalization of the tuberculous and $2,800,000 for expansion and operation of the health department. The governor took cognizance of the widely divergent views on health insurance expressed by members of a state commission that studied the subject. "Obviously this problem must await further study and disposition by the Congress of bills on this subject pending before it," he stated.

New York City

Harvey Society Lecture.—Dilworth W. Woolley, Ph.D., associate, Rockefeller Institute for Medical Research, will deliver the sixth Harvey Society Lecture of the current series at the New York Academy of Medicine, March 21. Dr. Woolley will speak on "Biological Antagonisms Between Metabolically Important Compounds and Their Analogues."

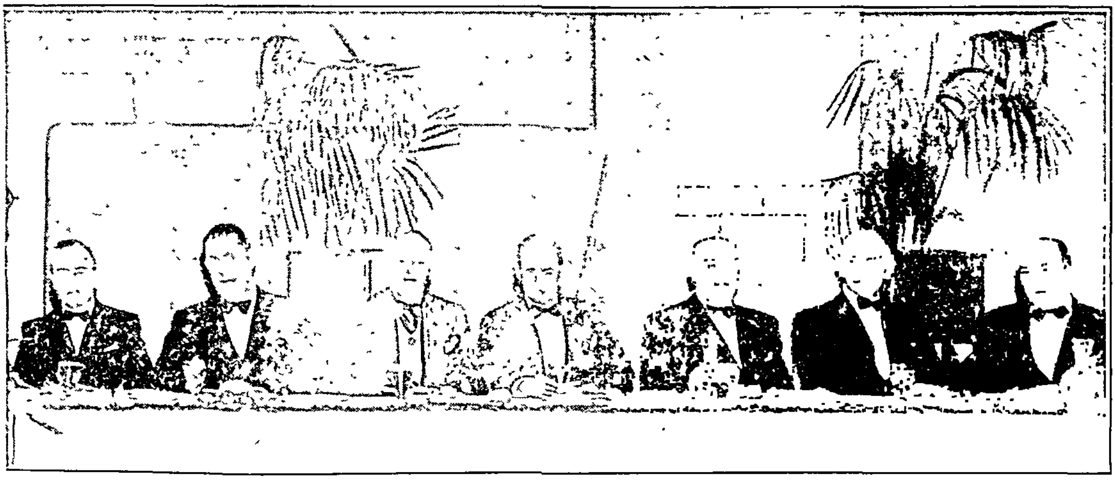
Presidents' Dinner.—The Medical Society of the County of Kings and the Academy of Medicine of Brooklyn held a dinner February 20 to honor four immediate past presidents of the county medical society. The society voted the annual dinner honoring the retiring presidents in 1941 but discontinued the practice during the war. Guests of honor were Drs. William C. Meagher 1942, John J. A. Gainey 1943, Leo S. Schwartz 1944 and Joseph Tenopyr 1945, all of Brooklyn. The physicians were given medals and scrolls. Dr. Thurman B. Givan, president of the Medical Society of the County of Kings, was toastmaster. In addition to the guests of honor, sixteen ex-presidents of the society were present at the dinner. Seated at the speakers' table were Dr. Charles F. McCarty, Brooklyn, secretary; Dr. Ignatius P. A. Byrne, Brooklyn, chairman of the dinner committee; Dr. Henry J. Barrow; Dr. Jean A. Curran, dean and president of the Long Island College of Medicine, Brooklyn; Dr. William B. Rawls, chairman, coordinating council of the five county medical societies; Dr. Abraham Koplowitz, Brooklyn, president-elect, Medical Society of the County of Kings; Dr. Tenopyr; Dr. Gainey; Dr. Morris Fishbein, Chicago, Editor of The Journal, who spoke on "Medicine in the Postwar World"; Dr. Givan; Dr. Edward B. Bernecker, newly appointed commissioner of health; Dr. John J. Masterson, Brooklyn, member of the executive committee, Medical Society of the County of Kings; Dr. Meagher; Dr. Schwartz, Dr. William C. White, president, Medical Society of the County of New York, and Dr. Vincent D. Juster, Jamaica, president, Medical Society of the County of Queens.



Drs. Charles F. McCarty, Ignatius P. A. Byrne, Henry J. Barrow, Jean A. Curran, William R. Rawls, Abraham Koplowitz, Joseph Tenopyr, John J. A. Gainey, Morris Fishbein.

Long Island Plans Expansion.—The Long Island College of Medicine, Brooklyn, has announced that a contract has been signed to purchase all but a small portion of a 6½ acre tract of land facing Kings County Hospital, Brooklyn, for an additional campus for the medical college. It is proposed that the buildings the college now utilizes on Henry Street in downtown Brooklyn be redeveloped as a clinical teaching center in cooperation with the Long Island College Hospital and that new basic science and other teaching facilities and research laboratories be built at the Kings County site. Proposals to extend the industrial medicine activities of the college are being incorporated in the planning for the Henry Street campus. The college expects to continue its "multicenter" plan of clinical teaching, in which ten hospitals and two health agencies in Brooklyn now cooperate, and to extend its affiliations where definite gains in the educational, research or service phases of the program are indicated. It was pointed out that the additional campus was being acquired on the recommendation of the faculty. After lengthy study it was recommended that the college should seek to locate its basic science facilities at the Clarkson Avenue campus while dividing its clinical teaching as at present among various hospitals, both public and private. This would free laboratory space on Henry Street for use in connection with important advances in clinical instruction and for graduate and postgraduate work. Brooklyn State and Kingston Avenue hospitals are adjacent to the Kings County Hospital. The three together contain 6,655 beds, probably the largest aggregate of hospital beds in the eastern United States. The Long Island College division of Kings County Hospital, where the college has had a teaching affiliation for a number of years, includes the branches of medicine, surgery, obstetrics and gynecology and pediatrics and the laboratory sciences in pathology, bacteriology and biochemistry. Its students also study at the Brooklyn State and Kingston Avenue hospitals.

Edward Bernecker Named Commissioner of Health.—Dr. Edward M. Bernecker on March 4 was appointed by Mayor William F. O'Dwyer commissioner of health to succeed Dr. Ernest L. Stebbins, who resigned to become professor of public health administration in the Johns Hopkins School of Hygiene and Public Health, Baltimore (The Journal, Nov. 10, 1945, p. 757). At the same time Mayor O'Dwyer named Dr. William F. Jacobs, medical superintendent of Bellevue Hospital, to succeed Dr. Bernecker as head of the city department of hospitals. In appointing Dr. Bernecker, the mayor is reported to have ignored a recommendation of a special committee (The Journal, March 9, p. 659) he had named to consider a successor to Dr. Stebbins. Dr. Thomas Parran, chairman of the committee and Surgeon General of the U. S. Public Health Service, in a statement to the press said that Dr. Stebbins had resigned "effective immediately" when the mayor failed to name one of the eight physicians recommended March 1. Meanwhile the mayor conferred with a group of physicians representing five medical societies in the city. Their chairman, Dr. William B. Rawls, described the naming of Dr. Bernecker and Dr. Jacobs as "splendid appointments." The physicians recommended by the Parran committee were Dr. Hugh R. Leavell, former health commissioner of Louisville, Ky.; Dr. James E. Perkins of Delmar, N. Y., a deputy commissioner of the New York State Department of Health; Dr. David D. Rutstein, now deputy health commissioner of New York; Dr. Edward S. Rogers, an assistant commissioner of the New York State Department of Health; Dr. Myron E. Wegman, a former deputy in the Maryland Health Department, now attached to the New York City Health Department; Dr. Herbert R. Edwards, acting head officer of the Kips Bay Health Center; Dr. Alexander D. Langmuir, a former deputy health commissioner of Westchester County and now in the army, and Brig. Gen. Stanhope Bayne-Jones, former dean of the Yale University School of Medicine.



Thurman B. Givan, Edward M. Bernecker, John J. Masterson, William C. Meagher, Leo S. Schwartz, William C. White, Vincent D. Juster.

OHIO

Postcollegiate Assembly.—On March 27 the Ohio State University College of Medicine, Columbus, will resume the annual postcollegiate assembly. The following program will be presented by members of the faculty:

Howard L. Bevis, LL.D., The Program for the Medical College in the University Planning.
Dr. Warren E. Wheeler, Pediatric Problems in the Postwar Period.
Dr. Shelby G. Gamble, Physical Medicine, Its Growing Importance in Modern Medical Practice.
Dr. Arthur M Culler, Progress in Ophthalmologic Practice and Research.
Dr. Herman A. Hoster, The Present Status of Cancer Research on the Campus at Ohio State University.
Rollo C. Baker, Ph.D., The Background of Our Medical Center.
John B. Fullen, The Place of the Medical Alumni in University Planning
Dr. Charles A. Doan, The Current Personnel and Physical Expansion of the College of Medicine: Its Teaching and Research Programs.
Dr. William G. Myers, Some Applications of Atomic Energy to Diagnosis and Therapy.
Dr. Allan C. Barnes, The Future of Obstetric and Gynecologic Practice.
Dr. Robert M. Zollinger, Current Problems in General Surgery and Their Solution.

Dr. Hymer L. Friedell, Rochester, N. Y., executive officer, Manhattan Project Medical Research Section, as guest lecturer, will discuss "The Effects of the Atomic Bomb at Hiroshima."

University News.—*Albert Baird Hastings, Ph.D.*, head of the department of biologic chemistry, Harvard Medical School, Boston, will address the commencement at Western Reserve University School of Medicine, Cleveland, March 18 on "Chemical Sectors of Medicine's Frontier." Eighty-two men and one woman will receive their degrees, the entire group including seventy-four in the army-navy training programs and nine civilians.

VIRGINIA

Physicians Plan War Memorial.—The Albemarle County Medical Society, February 8, adopted a resolution expressing the society's approval of setting aside a memorial floor in the proposed new University of Virginia Hospital building to honor local men and women who served in World War II.

Stuart McGuire Honored.—The second edition of Dr. John A. Hardy's "Synopsis of the Diagnosis of the Surgical Diseases of the Abdomen," published in 1945, carries the dedicatorial sentence "To Stuart McGuire of Virginia, who embodies the genius and excellence of a lineage of great surgeons, this book is admiringly dedicated." Dr. McGuire once was president of the Medical College of Virginia, Richmond, and an annual lectureship there now bears his name.

WASHINGTON

Health Department News.—Dr. Leonard A. Dewey, Seattle, has recently returned from military service to his position as head of the venereal disease control section of the Washington Department of Health. Dr. Walvin R. Giedt, Seattle, is head of the epidemiology section.

Personal.—Dr. Edwin S. Bennett, Los Angeles, has been named general superintendent of the King County Hospital system with headquarters at Harborview, effective February 1. Dr. Bennett, before his entry into the army, was medical director of the Los Angeles County Hospital

Physician Becomes Missionary.—Dr. Robert S. Sandilands, Montesano, who graduated at Northwestern University Medical School, Chicago, in 1938, plans to give up his practice in Montesano to enter medical missionary work; he will be stationed in Cameroon, French West Africa.

Golf Course Chosen Site for Medical Building.—Buildings for the new medical and dental school at the University of Washington will be located on the northwest corner of the university golf course. An overpass will connect the building with the main campus of the university. Construction is expected to begin early in the summer of 1946, and the building should be ready for occupancy by the fall of 1947.

WISCONSIN

Journal Dedicated to Mr. Braun.—The *Wisconsin Medical Journal* dedicated its December issue to Mr. Will C. Braun, recently retired business manager of the American Medical Association.

Heart Association Formed.—Papers were recently filed in the office of the secretary of state to incorporate the Wisconsin Heart Association, a new group to sponsor and assist in a state program for the prevention of heart disease. Incorporators are Drs. Ovid O Meyer, Nels A. Hill and Chester M. Kurtz, Madison; Alvin G. Koehler, Oshkosh, and Vincent M. Koch, Janesville.

Dr. Sevringhaus Goes to New Jersey.—Dr. Elmer L. Sevringhaus, professor of medicine, University of Wisconsin Medical School, Madison, has resigned to become director of clinical research for Hoffman LaRoche, Inc., in Nutley, N. J., effective about March 15. Dr. Sevringhaus has been a member of the Wisconsin staff since 1921, the year he graduated at Harvard Medical School, Boston.

Trust Fund Created for Young Physician's Children.—A trust fund has been started by associates of Lieut. Commdr. George W. Fox, Milwaukee, who died in action aboard the aircraft carrier *Franklin* after it was bombed by the Japanese near Kobe on March 19, 1945. Dr. Fox was awarded the Navy Cross posthumously for extraordinary heroism under fire. The trust fund is being set up through monies which are still being accumulated to assure a college education for the physician's three children. Dr. Fox was 38 years of age.

Supervisor of Local Health Services Named.—Dr. Allan A. Filek, Madison, was appointed supervisor of local health services by the state board of health at its January meeting. He will also continue his duties as director of the tuberculosis division until a qualified physician can be obtained to fill his former post. A tenth health district comprising Douglas, Washburn, Burnett, Polk and Barron counties, to be put into effect as soon as personnel can be obtained, was approved by the state board of health at its December meeting. Ten districts were authorized by the legislature, but only nine were set up originally. Five districts remain without medical officers, however, and these vacancies will be filled before the new district is staffed.

GENERAL

New Journal on Plastic and Reconstructive Surgery.—The American Society of Plastic and Reconstructive Surgery announces the publication of an official periodical to be known as *Plastic and Reconstructive Surgery*. The first number will appear in July and the journal will be issued bimonthly. One volume of 500 pages will be issued each year and the subscription price will be $6. Dr. Warren B. Davis, Philadelphia, will be the editor, with a board of twelve associate editors. Subscriptions should be sent to the publishers, the Williams and Wilkins Company, Baltimore 2.

National Committee on Medical Care Formed.—Dr. Leverett D. Bristol, commissioner of health and welfare, Maine Department of Health and Welfare, Augusta, has been appointed chairman of the National Committee on Medical Care of the American Public Welfare Association. The committee, made up of leading welfare authorities in the United States, includes state administrators as well as representatives of private agencies. The committee will consider adequate medical care for persons in need, the development of wise administrative procedures to cover the medical aspects of public assistance and a satisfactory program for the care of the chronically ill.

Snow Medal Awarded.—The William Freeman Snow Medal, given annually for distinguished service to humanity, was presented February 6 to Dr. John H. Stokes, director of the Institute for Control of Syphilis of the University of Pennsylvania, Philadelphia. Presentation took place during the annual meeting of the American Social Hygiene Association, New York. It coincided with a similar award in London to Col. Lawrence W. Harrison of the British Ministry of Health. The presentation in London was made by Sir Wilson Jameson, chief of the British Ministry of Health, and was heard at the local gathering by transoceanic rebroadcast.

Norton Award Goes to Edward Hume.—The Norton Medical Award for 1946 has been given to Dr. Edward H. Hume, New York, for his book Doctors East, Doctors West, an American physician's life in China. Doctors East, Doctors West is Dr. Hume's life story of building a medical center in Changsha, China, where the science of the West and the wisdom of the East met and where Chinese and Americans worked side by side in the pursuit and application of medical knowledge. Dr. Hume was born in India, received his education in the United States and spent twenty-five years in China, where he took part in the founding and development of the Yale-in-China Medical School. At present he is secretary of the Christian Medical Council for Overseas Work in New York. Doctors East, Doctors West will be published on May 3.

Morton Seidenfeld Joins Infantile Paralysis Foundation.—Morton A. Seidenfeld, Ph.D., until recently chief clinical psychologist with the rank of lieutenant colonel with the division of neuropsychiatry, office of the Surgeon General, U. S. Army, on February 25 was appointed director of psychologic services for the National Foundation for Infantile Paralysis. In cooperation with the medical director of the national foundation, Dr. Seidenfeld will inaugurate a research program on the psychologic problems and needs of infantile paralysis patients and will develop a plan for their psychologic treatment. Basil O'Connor, president of the foundation, said that Dr. Seidenfeld's appointment will add an important new sphere of activity to the organization's medical program. Based on modern practice in clinical psychology, the projected work will widen the scope of national foundation planning for the treatment of poliomyelitis patients, especially during convalescence, continuing care, and rehabilitation. When he entered the army in 1940 Dr. Seidenfeld had been director of rehabilitation for the Tuberculosis Institute of Chicago and Cook County.

Physicians Literary Guild Organized.—The American Physicians' Literary Guild was organized in San Francisco January 2 as a brother organization to the American Physicians Art Association. Officers include Drs. James C. Janney, Boston, president; Charles H. Best, Toronto, Ontario, Canada; James T. Flexner, New York, Martin Gumpert, New York, and Henry E. Sigerist, Baltimore, vice presidents; Francis H. Redewill, San Francisco, secretary; Paul P. E. Michael, Oakland, treasurer; Frederic N. Loomis, Oakland, chairman of judges, and Max Thorek, Chicago, general adviser. All physicians in America who write as an avocation are invited to join the guild. The group hopes to stimulate the best physician writers to send in their unpublished works to the literary exhibition during the annual session of the American Medical Association. It will also attempt to stimulate all physicians to complete a nonmedical essay, monograph, short story or poem for competitive consideration. For purposes of classification and awarding, literature is divided into fifteen classes with awards of silver and bronze plaques to be awarded first and second prizes respectively. Watch fobs will be awarded to each physician writer who sends in a literary work of merit. There will also be a president perpetual cup for the best medical essay or monograph, a secretary perpetual cup for the most humorous play, short story or poem and a grand prize given outright by Dr. Thorek for the best piece of literature handed in at the exhibition. The manuscript for competition should be nonmedical so as not to compete with writings presented at medical meetings or those published in medical journals. Other classifications include nonfiction: true story, up to World War II and beyond, essays and monographs; fiction: plays (drama, humorous), short story (serious, humorous), poetry (serious, humorous) and novel (romantic, historical, dramatic, action stories). Additional information may be obtained through Dr. Redewill, secretary, Flood Building, San Francisco 2. All manuscripts must be shipped to the secretary before June 1, express collect. After the exhibition the manuscript will be shipped to the author, express prepaid.

CORRECTION

Overtreatment Dermatitis of the Feet.—In an article with this title by Dr. G. B. Underwood in The Journal of February 2, page 255, appears the statement that the product called iso-par has as active ingredients "tars and derivatives." The manufacturer has called attention to the fact that the active ingredients of iso-par ointment are synthetic fatty acids derived from petroleum distillates. The product has been accepted by the Council on Pharmacy and Chemistry.

Deaths

Chester Arthur Stewart ⊕ New Orleans; University of Minnesota Medical School, Minneapolis, 1919; born in Hannibal, Mo., Nov. 6, 1890; professor and director of the department of pediatrics at the Louisiana State University School of Medicine; served as clinical professor of pediatrics at the University of Minnesota Graduate School of Medicine and at his alma mater, where he had also been an instructor in the department of anatomy, instructor in pathology, a fellow in pediatrics and assistant professor of pediatrics; past president of the Hennepin County (Minn.) Medical Society; member of the American Academy of Pediatrics and the Northwestern Pediatric Society; served as president of the Louisiana State Pediatric Society; in 1937 represented the National Tuberculosis Association and the American Academy of Pediatrics at the fourth International Congress of Pediatricians in Rome; served as director at large of the National Tuberculosis Association; formerly consulting pediatrician to the Lymanhurst Health Center and member of the staffs of the Abbott and Swedish hospitals, all in Minneapolis; on the staff of the Charity Hospital, where he died February 8, aged 55, of coronary occlusion.

Frank Spooner Churchill, Bass River, Mass.; Harvard Medical School, Boston, 1890; born in Milton, Mass., Aug. 26, 1864; member and in 1913-1914 chairman of the Section on Diseases of Children, American Medical Association; member and past president of the American Pediatric Society; served during World War I; at one time served on the staff of the Children's Memorial Hospital in Chicago, where he was on the staffs of Cook County and Presbyterian hospitals, medical inspector of the board of health and director of the milk commission; served as physician for the Juvenile Court, Chicago; at one time associate professor of pediatrics at Rush Medical College and member of the board of directors of the Juvenile Psychopathic Institute and the Infant Welfare Society in Chicago; medical assistant, Judge Baker Guidance Clinic, Boston; editor of the *American Journal of Diseases of Children* from 1911 to 1918; died in the Faulkner Hospital, Boston, February 27, aged 81, of heart disease.

John Verne Bohrer ⊕ New York; Cornell University Medical College, New York, 1914; member of the founders group of the American Board of Surgery; member of the American Surgical Association and the American Association for Thoracic Surgery; for many years instructor in surgery, University and Bellevue Hospital Medical College; served as president of the New York Society for Thoracic Surgery; fellow of the American College of Surgeons; director of surgery at the Knickerbocker Hospital; surgeon in charge of the Willard Parker Hospital; died in the New York Hospital December 6, aged 59, of hypertensive heart disease.

Charles Samuel Kibler ⊕ Tucson, Ariz ; Rush Medical College, Chicago, 1914; fellow of the American College of Physicians; member of the American College of Chest Physicians and American Heart Association; specialist certified by the American Board of Internal Medicine; served during World War I; past president of the Pima County Medical Society; on the staffs of St. Mary's Hospital and Sanatorium and Pima County General Hospital; affiliated with the Tucson Medical Center, serving as president of the first staff; co-exhibitor at the 1939 session of the American Medical Association of a display on potassium in hay fever; died February 25, aged 56, of coronary thrombosis.

Clifton Smith Abbott ⊕ Laconia, N. H.; Dartmouth Medical School, Hanover, 1894; past president of the New Hampshire Medical Society; fellow of the American College of Surgeons; for many years secretary and treasurer of the Belknap County Medical Society; on the staff of the Laconia Hospital; died in the Mary Hitchcock Memorial Hospital, Hanover, December 11, aged 74, of a skull fracture received in a fall.

Alfonza A. Aratus, Cincinnati; Louisville (Ky.) Medical College, 1904; died in the Christ Hospital December 1, aged 75, of cardiac and respiratory failure and prostatic hypertrophy.

Wylie McLean Ayres, Cincinnati; Medical College of Ohio, Cincinnati, 1900; at one time professor of clinical ophthalmology at the University of Cincinnati College of Medicine; fellow of the American College of Surgeons; on the staff of the Good Samaritan Hospital, where he died December 22, aged 71, of arteriosclerotic heart disease and myocardial infarction.

Frank Herbert Bartlett ⊕ Muskegon, Mich.; Tufts College Medical School, Boston, 1919; past president of the Muskegon County Medical Society; fellow of the American College of Physicians; medical director and superintendent of the Muskegon County Sanatorium; on the staffs of the Hackley and Mercy hospitals; formerly affiliated with the Central Maine Sanatorium, Fairfield, Maine and Healthwin Hospital (St. Joseph County Tuberculosis Hospital) South Bend, Ind.; died January 25, aged 51, of a skull fracture received in a fall.

John William Birk ⊕ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; fellow of the American College of Surgeons; veteran of the Spanish-American War; on the staff of the Ravenswood Hospital; served as obstetrician and as president of the staff at the Lakeview Hospital; formerly instructor in obstetrics at his alma mater; died December 8, aged 71, of cerebral hemorrhage and chronic nephritis.

Luther Erskin Boone, Chattanooga, Tenn.; Chattanooga Medical College, 1904; died December 6, aged 66.

Leon Maurice Bowes ⊕ Chicago; Rush Medical College, Chicago, 1903; served during World War I; colonel, medical reserve corps, U. S. Army, not on active duty; member of the staff of the Swedish Covenant Hospital, where he died December 24, aged 67, of organic heart disease, coronary sclerosis and arteriosclerosis.

Edwin H. Bradley, Peoria, Ill.; University of Vermont College of Medicine, Burlington, 1891; member of the American Medical Association; past president of the Peoria City Medical Society; for many years a member and at one time president of the staff of St. Francis Hospital, where he died December 23, aged 84, of cardiovascular renal disease and arteriosclerosis.

Theodore Wallingford Brown, Marissa, Ill.; University of Illinois College of Medicine, Chicago, 1940; member of the American Medical Association; began active duty as a first lieutenant in the medical corps, Army of the United States, on Feb. 3, 1943 and relieved from active duty in November 1944; died December 3, aged 35, of injuries received when he fell down two flights of steps.

Augustus Irving Burdeno, Wyandotte, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1883; formerly health officer of Delray and bank president; died December 3, aged 87, of pneumonia.

Jay M. Burgess ⊕ Detroit; Michigan College of Medicine and Surgery, Detroit, 1900; served as coroner; on the staff of the Providence Hospital, where he died December 8, aged 72, of cerebral hemorrhage.

Grover C. Caddell, Hoffman, N. C.; North Carolina Medical College, Charlotte, 1913; member of the American Medical Association; chairman of the board of county commissioners; died in the Moore County Hospital, Pinehurst, December 19, aged 58, of heart disease.

Clyde Clement Carroll, White Mills, Ky.; Hospital College of Medicine, Louisville, 1904; member of the American Medical Association; died December 4, aged 66, of cerebral hemorrhage.

Frank H. Caughell, Hermann, Mo.; University Medical College of Kansas City, 1883; local surgeon for the Missouri Pacific Railroad; postmaster; died November 22, aged 83, of diabetes mellitus.

Henry Dickinson Causey ⊕ Fairmont, W. Va.; University of Maryland School of Medicine, Baltimore, 1911; served during World War I; formerly on the staff of the Veterans Administration Facility in Portland, Ore.; medical consultant for the Consolidated Coal Company; died December 12, aged 64, of heart disease.

Charles Cornelius Clark ⊕ Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; fellow of the American College of Surgeons; served during World War I; on the staff of the Jackson Park Hospital, where he died December 28, aged 66, of cerebral thrombosis.

Ralph Deming ⊕ Toledo, Ohio; Hahnemann Medical College and Hospital of Philadelphia, 1902; member of the Radiological Society of North America, Inc., and the Toledo Academy of Medicine; served during World War I; on the staffs of the Robinwood Hospital, Maumee Valley Hospital and the Mercy Hospital, where he died December 4, aged 67, of heart disease.

Jerome De Motte, Odon, Ind.; Medical College of Ohio, Cincinnati, 1896; member of the American Medical Association; died in Evansville November 5, aged 76.

Arthur Norton Donaldson ⊕ Santa Ana, Calif.; College of Medical Evangelists, Los Angeles, 1915; clinical professor of medicine at his alma mater, where he had been professor of physiology; specialist certified by the American Board of Internal Medicine; formerly medical director of the Loma Linda Sanitarium and Hospital in Loma Linda and the Harriman Jones Clinic and Hospital in Long Beach; died in Loma Linda December 16, aged 57, of coronary thrombosis.

Breckenridge Johnson Duckett, Muskogee, Okla.; Medical Department of Grant University, Chattanooga, Tenn., 1900; died in a local hospital November 17, aged 78, of injuries received when he was struck by an automobile.

James W. Fortune, West Lafayette, Ohio; Starling Medical College, Columbus, 1891; died November 10, aged 84, of cerebral hemorrhage.

Robert Franklin Goodman, Boyds Creek, Tenn.; Tennessee Medical College, Knoxville, 1895; died in the General Hospital, Knoxville, November 12, aged 77, of injuries received when he fell under the wheels of a mule-drawn wagon.

William L. Gordon, Washburn, N. D.; University of Louisville (Ky.) Medical Department, 1894; for many years county health officer; died in Bismarck December 9, aged 72, of uremia and terminal pneumonia.

Isaac Lott Gotthelf ⊕ Saguache, Colo.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1904; served as president of the San Luis Valley Medical Society; died in the Denver and Rio Grande Western Railroad Hospital, Salida, December 4, aged 65, of myocarditis.

William Slater Greenleaf ⊕ Atlantic, Iowa; State University of Iowa College of Medicine, Iowa City, 1895; member of the Radiological Society of North America, Inc.; on the staff of the Atlantic Hospital; died December 9, aged 73, of heart disease.

Walter Kingsley Grigg ⊕ Albany, N. Y.; Albany Medical College, 1927; assistant in medicine at his alma mater; on the staffs of the Albany Hospital and the Child's Hospital; attending physician, Albany Guardian Society; died December 8, aged 53, of coronary thrombosis and coronary sclerosis.

Ernest A. Hancock, Ranger, Texas; Bennett College of Eclectic Medicine and Surgery, Chicago, 1889; died December 5, aged 78, of heart disease.

Harmon Howard Hays, Cleves, Ohio; Medical College of Ohio, Cincinnati, 1879; died December 5, aged 89, of arteriosclerosis.

Charles Francis Hester, Newton, Miss.; Mississippi Medical College, Meridian, 1907; died in Rush's Infirmary, Meridian, December 11, aged 65, of lobar pneumonia.

John Morley Hoag ⊕ Baltimore; College of Physicians and Surgeons, Baltimore, 1902; died January 10, aged 70, of coronary thrombosis.

Charles Waln Huffman, Lebanon, Tenn.; Eclectic Medical Institute, Cincinnati, 1894; member of the American Medical Association; died November 7, aged 75, of amebiasis.

Clarence Ludlam Hyde ⊕ Akron, Ohio; University of Michigan Homeopathic Medical School, Ann Arbor, 1906; fellow of the American College of Physicians; medical superintendent of the Edwin Shaw Sanatorium; on the staff of the City Hospital; at one time superintendent of the J. N. Adam Memorial Hospital in Perrysburg, N. Y.; died December 1, aged 67, of coronary thrombosis.

Addison Cornelius McCain, Greeley, Colo.; University of Colorado School of Medicine, Denver, 1904; member of the American Medical Association; on the staff of the Weld County Public Hospital, where he died November 27, aged 69, of carcinoma of the stomach.

John Johnston Miller, San Jose, Calif.; University of Michigan Homeopathic Medical School, Ann Arbor, 1880; served two terms as health officer of Santa Clara County; member of the board of health; died February 8, aged 86, of heart disease.

Lawrence Joseph Rigney ⊕ Wilmington, Del.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1920; fellow of the American College of Physicians; instructor in medicine at the University of Pennsylvania School of Medicine in Philadelphia; affiliated with the Delaware Hospital and St. Francis Hospital, where he died November 28, aged 55, of rupture of esophageal varix and cirrhosis of the liver.

William Zinke, Collbran, Colo.; Bennett College of Eclectic Medicine and Surgery, Chicago, 1890; member of the American Medical Association; died November 25, aged 79, of heart disease.

DIED WHILE IN MILITARY SERVICE

William Thomas Edmundson, Greeley, Colo.; University of Colorado School of Medicine, Denver, 1944; commissioned a lieutenant (jg) in the medical corps of the U. S. Naval Reserve on Oct. 9, 1944; died in the U. S. Naval Hospital, San Diego, Feb. 4, 1945, aged 23, of atypical primary pneumonia.

Charles Manly Griffith, New York; University of Virginia Department of Medicine, Charlottesville, 1917; born in Lexington, N. C., June 10, 1893; clinical professor of otolaryngology at the New York Post-Graduate Medical School and Hospital, Columbia University; member of the American Medical Association and the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; specialist certified by the American Board of Otolaryngology; consulting otolaryngologist at St. Agnes Hospital in White Plains and on the staff of the Manhattan Eye, Ear and Throat Hospital; commander, medical corps, U. S. Naval Reserve; participated in the South Pacific campaign and had received the Purple Heart and the Navy Cross; died Oct. 9, 1945, aged 52.

Max Leonard Holland ⊕ Roanoke, Va.; Medical College of Virginia, Richmond, 1935; interned at the Baroness Erlanger Hospital in Chattanooga, Tenn., and the Toledo Hospital in Toledo, Ohio; served a residency at the Gill Memorial Eye, Ear and Throat Hospital; began active duty as a captain in the medical corps, Army of the United States, on July 29, 1942; died in Fort Benning, Ga., Nov. 9, 1945, aged 37, of bronchopneumonia.

Harry H. Jackson, Detroit; Detroit College of Medicine and Surgery, 1917; served during World War I; began active duty as a commander in the medical corps of the U. S. Naval Reserve on Aug. 17, 1940; promoted to captain; died in the U. S. Naval Hospital, Jacksonville, Fla., Dec. 17, 1944, aged 51, of ruptured abdominal aneurysm of the aorta.

Raymond Luft, Norwood, R. I.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1934; born in Jersey City, N. J., Nov. 16, 1904; interned at the Royal Victoria Hospital in Montreal, Que., Canada; assistant resident physician at the Massachusetts General Hospital in Boston; past president of the Kent County Medical Society and the Rhode Island Public Health Officers Association; member of the American Medical Association; superintendent of health in the city of Warwick; served on the staff of the Rhode Island Hospital in Providence; began active duty as a lieutenant in the medical corps, U. S. Naval Reserve, on February 28, 1944; assigned to the auxiliary personnel attack ship U. S. S. Henrico and participated in the invasion of Normandy; sent to North Africa later to prepare for the invasion of southern France; became ill and was transferred to a hospital in Naples and shortly afterward came back to the United States; after hospital treatment here he was assigned as medical officer for training units at Harvard and Tufts College, a position he held until he was hospitalized ten days prior to his death; held the European-African-Middle Eastern Area Campaign Medal; died in the Naval Hospital, Newport, June 23, 1945, aged 40, of coronary thrombosis.

Robert Bliss Miller, Argos, Ind.; Indiana University School of Medicine, Indianapolis, 1934; member of the American Medical Association; interned at St. Joseph Hospital in South Bend; began active duty as a captain in the medical corps, Army of the United States, on Dec. 15, 1940; died in the Percy Jones General Hospital, Fort Custer, Mich., April 30, 1945, aged 35, of carcinoma.

Jesse Frederick Steiner Jr., Seattle; Stanford University School of Medicine, San Francisco, 1941; born in Chicago, Oct. 4, 1914; interned at the San Francisco Hospital in San Francisco; served with the Royal Medical Corps of the British army from Sept. 6, 1941 to May 24, 1943, as a first lieutenant and later as captain; transferred to the medical corps, Army of the United States, on May 25, 1943, serving as first lieutenant and later as captain; served with the 16th Field Hospital, which was with General Patton's Third Army during its drive through France and Germany, and earned five battle stars for his European Theater ribbon and the Bronze Star Medal; relieved from active duty Oct. 13, 1945; assistant resident physician at Stanford University Hospital in San Francisco, where he died October 11, aged 31.

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb 16, 1946

The Services to Medicine of the Aslib Microfilm Service

The cutting off in the early days of the war of the scientific periodicals of Germany and of occupied countries presented a serious problem in obtaining information vital to research To meet this difficulty the Association of Special Libraries and Information Bureaus (Aslib) was organized in April 1942 through the cooperation of the Royal Society, the Rockefeller Foundation and British Industry This organization supplied a microfilm service of scientific periodicals published in Germany and occupied countries for use by the British and American governments and by British and American scientific institutions and research centers The library of master negatives accumulated for the purpose contains some 14 000 separate issues of 500 titles The Aslib Microfilm Service supplied China when that country was cut off from ordinary surface transport This service grew so that during the last year 170 periodicals were regularly microfilmed and six positive copies of each were flown to China One hundred microfilm projects set up in a dozen reading centers enabled the Chinese to keep in touch with developments in the outside world

The end of the war reduced the demand for the Aslib Microfilm Service, but there was a need for documentary reproduction A plan for the rehabilitation of the medical libraries in Europe, destroyed or despoiled by the Germans was presented by the Royal Society of Medicine Aslib agreed to the transfer of the Microfilm Service and became an integral part of the Central Medical Bureau of the Royal Society of Medicine Requests for copies from existing master negatives and for copies of individual references may be addressed to Aslib, 52 Bloomsbury Street, London, W C 1

A Residential Rehabilitation Center

A residential rehabilitation center for those injured in the war or in industry has been set up at Egham near the Eton school Employers, trade unions and orthopedic surgeons are convinced that severe disablement and convalescence must be followed by a gradual approach to ordinary employment On a 55 acre estate dormitories, workshops, class rooms and a gymnasium surround a spacious mansion located in well wooded grounds Here 230 men, whom the center can accommodate during courses lasting six to eight weeks, are gradually acclimatized to working conditions by gaining confidence in the manipulation of artificial limbs or overcoming other physical and mental handicaps

Of 1,000 men who have passed through this center, about 500 have returned to former jobs or other suitable occupations, many of the others have entered governmental or other establishment for further training While in residence the men receive free board and lodging and allowances irrespective of their pensions

Congenital Defects Following Rubella in Pregnancy

Only a few years ago an Australian ophthalmologist, N M Gregg (*Tr Ophth Soc Australia* **3**:35, 1941) first drew attention to cataract and other congenital deformities following rubella during pregnancy He reported 78 cases of congenital cataract in babies born between December 1939 and January 1941 in which the mothers, with few exceptions, had suffered in the early months of pregnancy from an exanthem diagnosed as rubella In at least 44 of the infants there was also a congenital lesion of the heart The cataract was of a peculiar type which differs from other congenital types Gregg's observations have been confirmed by other Australian observers In America A B Reese (*Am J Ophth* **27**:483 [May] 1944) reported 3 cases In Britain R E Hope Simpson (*Lancet* **1**:483 [April 8] 1944) reported 3 cases A case has recently been reported to the Section of Obstetrics of the Royal Society of Medicine by Ivor Hughes

Mr Ivor Hughes pointed out that the pathology of such cases is obscure. It has been suggested that the filtrable virus of rubella passes through the barrier of the chorionic villi at a time when lens and septum formation are occurring (sixth to eighth weeks of pregnancy), resulting in ocular and vascular lesions Therefore the percentage of congenital lesions is higher if rubella is contracted during the first three months of pregnancy It has been suggested that it would be justifiable to terminate pregnancy when the occurrence of rubella is proved Mr Hughes does not agree as the percentage of cases of rubella in which fetal defects follow is not known, since only positive cases have been recorded It seems curious that these congenital lesions should be traced to the mildest of the exanthems while none have been observed to follow the more common and more severe infections of measles and scarlet fever Have sequels of these later diseases been overlooked? The congenital lesions of syphilis are analogous to those due to rubella This relationship might long have remained unobserved but for the genius of Hutchinson

ITALY

(From Our Regular Correspondent)

Dec 31, 1945

Society of Experimental Biology

The Societa Italiana di biologia sperimentale, which did not function during the war, was recently reorganized Dr Gaetano Quagliarello, professor of biologic chemistry at Naples University, was appointed president Branches of the society in Naples, Florence, Rome, Milan and Turin were also reorganized Dr Nello Beccari, professor of comparative anatomy at the Florence University is the president of the branch in Florence The attendance at meetings has been both distinguished and large, indicating the zeal with which the medical profession is trying to make up for the lack of progress during the war In the meetings of the society recently held a number of papers were read Tarantino discussed relations between histidine metabolism and the development of bacteria Pasquinelli reported results of experiments on histidine metabolism in the remaining hyperplastic testis of a guinea pig after removal of one testis The acuteness of histidine oxidation is proportional to the percentage of cells which undergo karyokinesis in the testis The speaker believes that histidine is used by the cells during the process of hyperplasia Donatelli discussed the influence of sex and age on acute mercury poisoning, which he observed in 60 cases The death rate was 83 8 per cent for men and 37 9 per cent for women It was higher in children, adolescents and old persons than in young and mature adults The data were confirmed by experiments on guinea pigs and rats in which the male animals were more resistant than female animals to mercury poisoning That the greater resistance of males is due to testicular hormones was proved by the fact that the resistance to mercury poisoning in males after castration is as low as that of females The administration of synthetic testicular hormones to females increases the resistance of the latter to a level equal to that of normal males Tarantino found by in vitro experiments (Warburg) that the filtrates of cultures of a strain of penicillin which had strong bacteriostatic power prevented consumption of oxygen by Staphylococcus pyogenes aureus The process of dehydrogenation and the glycolytic metabolism of the same species of bacteria was not altered Agonistic effects between substances of the penicillin and sulfonamide (aminobenzaldehyde) groups do not seem to exist

Care of Orphans of Physicians

The care of orphans of Italian physicians who were killed in the war has been in charge of a national committee of which Dr. Siro Fada, the general director of national public health, was president. The committee cared for the orphans until September 1945, although its functions should have ceased in December 1942, according to the original plan. Dr. Fada recently reported to the Ministry of War on the work of the committee. The amount of money collected for this purpose is insufficient. The members of the committee agreed to turn over the remaining funds to the central Opera Nazionale for the care of these orphans. All Italian physicians contribute a monthly sum.

BRAZIL

(From Our Regular Correspondent)

Rio de Janeiro, Feb. 9, 1946.

Diphtheria Investigations

The campaign against diphtheria is gaining impetus in the large cities of Brazil, mainly through the use of active immunization. Drs. Maria C. de Andrade and Jandyra P. do Amaral of the Division of Bacteriology of the Butantan Institute of São Paulo have recently completed an investigation to ascertain the rate of diphtheria carriers among the school children of the city of São Paulo and to determine if the increase in the number of children immunized in recent years is correlated with a reduction in the rate of carriers in this population group. In the public schools 108,952 children have been immunized with three doses of fluid diphtheria toxoid, and 9,891 more have had incomplete immunization. The authors examined 3,071 children from different sections of the city, culturing material from the throat and nose. All cultures considered negative were tested for the fermentation of carbohydrates, for hemolytic power, for virulence and for toxigenic power.

Fifty-eight among the 3,071 children presented positive cultures for the diphtheria bacillus, or 1.88 per cent, a figure that can be contrasted to that of 3.7 per cent obtained by Castro Simões in 1921 in the examination of 1,054 public school children of the same city. The long interval between the two investigations excludes a definite conclusion in favor of a reduction of the rate of carriers, as several epidemiologic factors may have acted to influence the results. The difference between the rate of carriers among the vaccinated children (15 out of 1,072, or 1.40 per cent), and the nonvaccinated (43 out of 1,870, or 2.30 per cent) is not statistically significant, as the authors have pointed out. Nor is there a significant difference between the rate for white (47 carriers in 2,531 children, or 2.85 per cent) and for colored children (11 carriers in 540 children, or 2.04 per cent). It is important to point out that, of these 58 positive cultures, only 1 was of a virulent type and only 9 were toxigenic. If the rate is calculated on the basis of 1 virulent sample, the rate would be reduced to 0.32 per cent.

Hypertension and Pregnancy

Dr. S. Oliveira de Barros and Dr. Justino O. Castro, obstetricians of the Vila Mariana District Health Center, city of São Paulo, have reported several interesting features of 217 cases of hypertension observed among 1,754 pregnancies at the center. The authors decided to use the value 125 mm. as an average systolic pressure based on Brazilian experience; this figure is a little higher than the American value of 120 mm., as suggested by De Lee. They used the value 155 mm. to establish the lower limit of what they call "marked" hypertension, in contrast to "slight" hypertension for the cases with values below 155 mm. They also classify the cases into "acute" and "chronic," using for this distinction the arbitrary limit of the fifth month of pregnancy, based on the assumption that, in the majority of the cases, the hypertension observed in the first months denotes renovascular sclerosis preexistent to the pregnancy, while the pressure change developed from the fifth month on is primarily connected with the pregnancy itself. In the 217 cases the hypertension has been classified as "slight" in 164 (75.6 per cent) and "marked" in 53 (24.4 per cent). In 165 of the cases 68, or 41.2 per cent, have been considered acute and 97, or 58.8 per cent, chronic. In 15 of the cases in which the authors were able to observe one or more subsequent pregnancies, all of them showed the tendency to present higher values for the blood pressure during the later months of gestation.

Cesarean Section and Fertility

Dr. C. Correa la Costa, director of the Arthur Bernardes Maternity Hospital, studied 188 cases of cesarean section performed in previous years in several hospitals of Rio de Janeiro. At the time of the operation 7 patients were between 15 and 19 years of age, 127 between 20 and 29, 50 between 30 and 39 and 4 40 or more. The frequency distribution of the number of pregnancies the women had had before the cesarean section was none in 141 cases, one pregnancy in 25 cases, two or three pregnancies in 12 cases, four or five pregnancies in 5 cases and six or more pregnancies in 5 cases. After the cesarean section 108 women of the 188 have again conceived one or more times (57.4 per cent of fertile cases) and 80, or 42.6 per cent, have been sterile. Of the 80 women included in the sterile group, 2 died as a consequence of the cesarean section, 2 were subjected to ligation of the oviducts and 1 was subjected to hysterectomy. It was ascertained that, among 80 sterile women after the operation, 38 used contraception. There were 28 cases of postoperational sterility, or 32.5 per cent, studied two to three years after cesarean section. Of 46 cases after a four to five year interval there were 10 cases of postoperational sterility, or 21.7 per cent. Of 56 cases in which the interval was six or more years there were 3 cases of postoperational sterility, or 5.3 per cent. Dr. Costa points out that the sterility rate diminished as the time interval between the operation and the investigation increased. These figures indicate that cesarean section does not lead to loss of fertility.

Personal

Admiral Oswaldo Palhares of the Brazilian Navy Medical Corps has been appointed surgeon general of the corps, succeeding Admiral Fabio de Vasconcellos, who had occupied the post since October 1943. Admiral Palhares has announced his general policy, which includes the creation of the Navy Medical School.

Dr. James A. de Tomasi, professor at Cornell University, is spending some time in Brazil, making studies of biology in the cities of Ouro Preto, Diamantina, Sabará and Congonhas, all in the state of Minas Gerais.

Marriages

Randolph Armistead Cate, Nashville, Tenn., to Miss Marcella Shinnick of Thompson, N. D., at Fort Lewis, Wash., December 31.

John W. Jansonius, Eldora, Iowa, to Miss Fern Maria Rippee of Hartville, Mo., in Bloomington, Ind., December 23.

Richard George Whiting, Medford, Mass., to Miss Christine Rosemary Wilson of London, England, January 14.

William Duer James Jr., Hamlet, N. C., to Miss Sara Brooks Nair of Clifton Forge, Va., January 29.

James Franklin Land, Youngstown, Ohio to Miss Elizabeth Jane Morrison of Kokomo, Ind., December 29.

Herman Pepper to Dr. Genevieve Ellen Gaard, both of Redwood City, Calif., in Seattle, February 8.

Hugh Dortch Jr. to Miss Mae Joyce Whitfield, both of Durham, N. C., February 2.

Richard R. Bobb, Lykens, Pa., to Miss Elma Faye Knorr at Paxtang, January 18.

Correspondence

SALICYLATE-INDUCED HYPOPROTHROMBINEMIA

To the Editor:—The communication from Lieutenant Colonel Higley in The Journal, Dec. 15, 1945, page 1123, concerning the clinical significance of salicylate-induced hypoprothrombinemia, prompts the following comments.

According to Shapiro (Studies on Prothrombin: VI. The Effect of Synthetic Vitamin K on the Prothrombinopenia Induced by Salicylate in Man, The Journal, June 24, 1944, p. 546) "there are no fixed levels of prothrombinopenia at which bleeding is known to be established." Therefore a prolongation of the prothrombin time from 14 to 20 seconds may well constitute a "dangerous disturbance." Various statements from authoritative sources reflect the concern—which Dr. Higley apparently does not share—in professional circles here and abroad with respect to the possibility of salicylate-induced hypoprothrombinemia being a factor in the causation of hemorrhages. For instance, The Journal saw fit to caution in an editorial (Is Aspirin a Dangerous Drug? March 18, 1944, p. 777) that patients "who are to receive large doses for a long time may appropriately be given vitamin K." Similarly, Fashena and Walker (Salicylate Intoxication: Studies on the Effects of Sodium Salicylate on Prothrombin Time and Alkali Reserve, *Am. J. Dis. Child.* **68**:369 [Dec.] 1944) state, with reference to salicylate therapy in children, that "the concomitant administration of vitamin K is indicated." Another editorial in The Journal (Hazards in the Salicylate Treatment of Rheumatic Fever, Feb. 24, 1945, p. 460) contains the statement:

> Rheumatic fever often is accompanied by a widespread vascular damage, thus increasing the hazards of hemorrhagic complications after salicylate administration. When adequate amounts of vitamin K are given with salicylates, much of the danger of these complications may be prevented. Possible hazards in the administration of salicylates should be remembered, so that unnecessary dangers may be avoided.

And in an editorial of the *British Medical Journal* (Toxicity of Salicylates, July 7, 1945, p. 19) we read "The danger from diminished prothrombin can fortunately be removed by the simple expedient of giving the patient vitamin K or a related substance such as menaphthone (B. P.). . . . No doubt the regular use of menaphthone together with salicylates will gradually become established." Similarly the *Lancet* contains the following statement under Annotations (Salicylates and Hemorrhage, Oct. 2, 1943, p. 419): "There seem to be good grounds for giving vitamin K . . . prophylactically to patients having large and continued doses of salicylates."

Indeed, precautionary measures in this direction are warranted since even fatalities have been reported in which salicylates appeared to be the lethal factor. For instance, Ashworth and McKemie (Hemorrhagic Complications, with Death Probably from Salicylate Therapy, The Journal, Nov. 25, 1944, p. 806) have observed two deaths from extensive hemorrhages, particularly involving the brain, following administration of large doses of salicylate. Autopsy findings suggested as probable cause of the fatal outcome "a combination of capillary damage and hypoprothrombinemia produced by the salicylates."

Troll and Menten (Salicylate Poisoning, Report of 4 Cases, *Am. J. Dis. Child.* **69**:37 [Jan.] 1945) have reported three fatalities out of 4 cases of salicylate poisoning. In their cases, too, autopsy revealed widespread capillary hemorrhages.

While the number of those who take salicylates with impunity may be legion, reports as the aforementioned indicate that the prevention of prothrombinopenia by concomitant vitamin K administration may make the difference between life and death in some cases.

Lieutenant Colonel Higley takes exception to an article by Capt. Rudolf Singer (Acetylsalicylic Acid—A Probable Cause for Secondary Post-Tonsillectomy Hemorrhage: A Preliminary Report, *Arch. Otolaryng.* **42**:19 [July] 1945), who on the basis of clinical observation concluded that the prothrombinopenic effect of salicylates "seems to be a plausible explanation for the occurrence of secondary post-tonsillectomy hemorrhages."

My report Late Secondary Tonsillar Hemorrhage: I. Studies of Prothrombin and Vitamin K (*Arch. Otolaryng.* **42**:14 [July] 1945) seemingly escaped the attention of Lieutenant Colonel Higley. In studies conducted at the Pharyngology Research Laboratory, Department of Otolaryngology, Columbia University College of Physicians and Surgeons and Presbyterian Hospital, we were able to prove that a hypoprothrombinemic state induced by salicylate medication is one of the most important factors in the etiology of secondary tonsillar hemorrhage; furthermore, that by using a vitamin K preparation such as Synkayvite in conjunction with acetylsalicylic acid, the prothrombin-lowering effect of the latter was rendered ineffectual and that this was followed by a decidedly decreased bleeding incidence.

It is noteworthy that these two communications, Singer's and mine, appeared in the same issue of the *Archives of Otolaryngology* and that they were abstracted in the same issue of The Journal.

The study of drug-induced prothrombinopenias has been taken up only recently and, to be sure, the evaluation of the clinical significance of some of the observations awaits further investigation.

Nevertheless, as a worker in the field, I have had adequate experience to be convinced that salicylate-induced hypoprothrombinemia is of definite clinical importance. I should like to state my opinion that the prevention of such prothrombinopenia by administration of vitamin K in conjunction with acetylsalicylic acid, as suggested by The Journal, the *Lancet* and the *British Medical Journal*, is indeed warranted.

Harry Neivert, M.D., New York.

TREATMENT OF BLACK WIDOW SPIDER BITE

To the Editor:—In relation to the observations made by Drs. Bell and Boone in The Journal, Dec. 8, 1945 related to black widow spider bites, I wish to state the following:

Here, among us, there has been, for many years, a way of combating the intoxication caused by the sting or bite of the scorpion, spiders such as the black widow, and certain other intoxications caused by the bite or sting of other animals or insects not always readily discovered, by means of injections of a 10 per cent aqueous solution of magnesium or sodium thiosulfate as described in the National Formulary VII.

The only caution required in a treatment of this nature is the application of successive doses until symptoms of intoxication disappear permanently. Apparently there is a neutralization of the toxins in a direct manner by means of the thiosulfate ions. As we are never able to know in such cases the toxic dose injected by the animal or the degree of toxicity of the substance injected, care must be exercised to repeat successive doses until permanent disappearance of toxic symptoms.

M. A. Pulido, M.D., Guadalajara, Mexico.

To the Editor:—The article on page 1016 of The Journal, Dec. 8, 1945, exemplifies a lack of knowledge concerning the dynamics of action of Latrodectus mactans toxin. The toxic action mimics overdosages from strychnine, physostigmine and neostigmine. The treatment of choice, as far as drugs are concerned, is to use curare or drugs with a curare-like action. The extreme pain and myotonia may be relieved in five minutes, not six and one-half hours, by the intramuscular or intravenous use of a sterile 25 per cent solution of magnesium sulfate.

P. L. Davis, M.D., East Orange, N. J.

Bureau of Investigation

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the Federal Security Agency

[Editorial Note.—These Notices of Judgment are issued under the Food, Drug and Cosmetic Act, and in cases in which they refer to drugs and devices they are designated D.D.N.J. and foods, F.N.J. The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the date of shipment; (4) the composition; (5) the reason for the charge of misbranding, and (6) the date of issuance of the Notice of Judgment.]

Cruez Herb Douche, Cruez No. 9 Herb Tea and Cruez No. 10 Herb Tea.—St. Clair Herb Company, East St. Louis, Ill. Shipped Oct. 17, 19 and 24, 1942. Composition: Douche—essentially a small amount of ferric sulfate and lesser amounts of compounds of magnesium and calcium, unnamed plant extractives and water; No. 9 Herb Tea—chiefly small amounts of extracts of plant drugs, salicylic acid and water; No. 10 Herb Tea—essentially small proportions of plant drug extracts, salicylic acid and water. Douche declared misbranded because label falsely represented it as efficacious to build health and cure or prevent infections and growths of the female organs. Cruez No. 9 Herb Tea and Cruez No. 10 Herb Tea misbranded because falsely represented to cure or prevent gout, rheumatism, impaired sexual vigor and disorders of the blood, kidneys and bladder.—[*D. D. N. J., F. D. C. 934; October 1944.*]

Mennen Antiseptic Oil.—Mennen Company, Newark, N. J. Shipped Feb. 16, 1942. Composition: a yellow, perfumed, saponifiable oil containing small amounts of hydroxyquinoline, chlorobutanol, hydroquinone and benzoic acid. Misbranded because of these false and misleading label claims, among others: "It has equal antiseptic and germicidal powers to the commonly used ammoniated mercury ointments. . . . Meets the widespread demand of hospitals, physicians, nurses and mothers . . . offers protection against infection."—[*D. D. N. J., F. D. C. 926; October 1944.*]

Paracelsus.—American Biochemical Corporation, Cleveland. Shipped May 22, 1942. Composition: chiefly potassium chloride, sodium phosphate, chloride and bicarbonate, magnesium sulfate, calcium lactate and lesser amounts of other chemical salts. Misbranded because of false label representations regarding mineral content and efficacy as a dietary supplement, a body builder, a tonic and a remedy for disorders due to dietary deficiencies, particularly in minerals; also because recommended for arthritis, neuritis, influenza and phlebitis.—[*D. D. N. J., F. D. C. 925; October 1944.*]

Presto for Blackheads (Presto Stick).—McJohn Cosmetic Company, Hollywood, Calif. Shipped July 21, 1942. Composition: essentially ground pumice and titanium dioxide, in a hydrated waxy base. Misbranded because falsely represented on label to remove blackheads.—[*D. D. N. J., F. D. C. 942; October 1944.*]

SNL (Suffer No Longer).—Mrs. Cora Lee Wiley, doing business as the SNL Company, Adel, Ga. Shipped May 27 and July 19, 1941. Composition: essentially iodine, boric acid, organic silver compound, iodide, sulfate, and a small amount of a magnesium compound, with alcohol, glycerin and water. Misbranded because label falsely represented that SNL would, among other things, relieve female and abdominal troubles, protect women against every germ, including that of tuberculosis, and enable the user to build health, happiness, strength and beauty and increase length of life.—[*D. D. N. J., F. D. C. 932, October 1944.*]

Tritolac.—Thomas E. Collins Company, San Francisco. Shipped July 15, 1940. Composition: essentially embryonic tissues closely resembling wheat germ, with something similar to spray-dried skim milk, and an appreciable amount of wheat bran particles. Misbranded because label falsely represented that product would cure or prevent disease, stimulate rundown or nervous persons, help to correct functional and degenerative changes in the entire nervous system and similar changes in the body organs and tissues, and benefit some other disorders.—[*D. D. N. J., F. D. C. 929; October 1944.*]

Tuberculosis Compound.—Emile Carpentier, trading as Dr. Emile Carpentier, N.D., Hillsdale, N. J. Shipped Oct. 1, 1941. Composition: essentially plant material, sugars, a fatty substance and water. Misbranded because of false and misleading label representations that product would cure in from six weeks to six months tuberculosis in various parts of the body as well as many other disorders, and contained tested exhilarating and vitalizing herbs, roots and ingredients which would eliminate the germs ("bugs") of tuberculosis. Following a verdict of guilty by a jury in the district federal court of New Jersey, Carpentier was sentenced to a year in the custody of the Attorney-General, but sentence was suspended and defendant was placed on probation for five years.—[*D. D. N. J., F. D. C. 931; October 1944.*] In 1933 and 1940 the Post Office Department debarred from the mails the fraudulent "consumption cure" business that Carpentier had operated under various names, including those of himself and his wife. In 1938 he was fined $15,000 in a federal court for defying an order of the Federal Trade Commission to cease representing that the "T. B. Compound" put out under his name had therapeutic value.

Vita Malt with Natura Calcium Compound.—Natura Remedy Company, Los Angeles. Shipped May 23, 1941. Composition: Vita Malt, essentially a malt extract, with small amounts of saponifiable oils, water and sodium benzoate; Natura Calcium Compound, sodium bicarbonate and calcium salts. Vita Malt misbranded because label falsely represented that product would reduce body weight and benefit a variety of disorders, such as anemia, nervousness, sleeplessness, glandular disturbances, lack of appetite, infections and arthritis. Natura Calcium Compound misbranded because represented as effective in treating colds and la grippe.—[*D. D. N. J., F. D. C. 945; October 1944.*] Vita Malt also misbranded under the provisions of the law applicable to foods, as reported in *F. N. J. 5788.*

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Opticians' Practice Act (Connecticut): Application to Operation of Optical Store Not under Supervision of Licensed Optician and Filling Prescriptions of Licensed Physicians.—Chapter 161a, General Statutes, Connecticut, Cumulative Supplement, 1935, provides for the regulation of opticians and optical establishments. Section 1161c of that chapter reads as follows:

> No optical glasses or kindred products or other instruments to aid vision shall be sold at retail except under the supervision of a licensed optician and in a licensed optical establishment, office or store. Any optical establishment, office or store, not under the supervision of a licensed optician, may sell eyeglasses upon a permit from said commission to so sell, provided such permit shall specify the articles which may be sold. Said commission shall have the power to issue such a permit.

The defendant conducted an optical retail store without the supervision of a licensed optician, nor did he possess a permit from the commission of opticians (the licensing agency created by the chapter just referred to) as apparently required by the section quoted. He operated, so he claimed, by selling "optical instruments" at retail only on the prescription of a licensed physician in his employ. Neither he nor any person in his employ, other than the licensed physician, attempted to measure the vision of the eye. He was convicted on an information that charged in three counts violation of the section quoted. The first count charged that he conducted an optical store without a permit; the second, that he conducted the store without the supervision of a licensed optician; and third, that he sold optical instruments at retail in violation of the section. He appealed to the Supreme Court of Errors of Connecticut.

The defendant claimed (1) that the statute for the violation of which he was convicted was invalid and (2) that he did not violate that section because he sold only on the prescription of his physician employee and did not attempt to measure vision. The defendant's claim, said the Supreme Court of Errors, that he did not violate the statute may be stated broadly to be that chapter 161a, supra, exempts optometrists from its provisions and that chapter 161, supra, relating to optometrists, excepts physicians from its provisions, and hence the optical instruments sold on the prescription of a licensed physician employed by him, with no attempt on the part of the defendant to measure vision of the eye, did not constitute a violation of the statute quoted. The short answer to this claim is that physicians prescribe and opticians fill prescriptions and that chapter 161a (the opticians' practice act) for the violation of a section of which he was convicted relates to the filling of prescriptions and not to the making of them. One of the statutory definitions of an optician is "one . . . skilled in the technique of producing and reproducing ophthalmic lenses and kindred products and mounting the same to supporting materials" (section 1175e). Such mechanical skill is not required of a physician nor is it a tenable claim that the legislature presumed that a physician would have such skill. It is apparent that the supervision of a physician in the defendant's store did not comply with the provision of the statute quoted requiring the supervision of a licensed optician.

The first count of the information charged the defendant with conducting an optical store without a permit from the commission of opticians. Admittedly, said the court, the defendant sold optical instruments without a store permit. He claimed, however, that that part of the statute quoted requiring a store permit is unconstitutional as an unlawful attempt to delegate power to the commission of opticians. Section 1167c (a section of the opticians' practice act) gives the commission authority to make regulations concerning the granting of permits to optical departments. Section 1162c provides that the commission shall grant permits "upon satisfactory evidence to said commission that such . . . store is being conducted in accordance with the regulations of said commission." The only suggestion as to the character of such regulations is that they must not be inconsistent with law and must be in keeping with the provisions of chapter 161a. Nowhere in the chapter are there any provisions as to the method of conducting the business which would limit the regulations. No sufficient guide for the exercise of the discretion reposed in the commission has been set up. No standards for the issuance of permits have been specified. As was said in *State v Stoddard,* 126 Conn 623, 13 A (2d) 586:

> A legislature, in creating a law complete in itself and designed to accomplish a particular purpose, may expressly authorize an administrative agency to fill up the details by prescribing rules and regulations for the operation and enforcement of the law. In order to render admissible such delegation of legislative power, however, it is necessary that the statute declare a legislative policy, establish primary standards for carrying it out or lay down an intelligible principle to which the administrative officer or body must conform, with a proper regard for the protection of the public interests and with such degree of certainty as the nature of the case permits, and enjoin a procedure under which by appeal or otherwise, both public interests and private rights shall have due consideration.

The necessary standards on which the commission is to base its regulations as to the suitability of optical establishments entitling them to a permit are not established by chapter 161a. The court accordingly held that the provisions of the statute quoted with respect to store permits are invalid.

The second and third count of the information under which the defendant was convicted charged that he had conducted his store without the supervision of a licensed optometrist and that he had sold optical instruments at retail in violation of the section quoted. The defendant claimed in this respect, that there was no adequate provision made in the opticians' practice act for the licensing of opticians and that therefore the absence of a licensed optician in his store would not subject him to criminal prosecution. The preliminary requirements in the opticians' practice act, said the court of errors, with respect to examining applicants for a license to practice as opticians are reasonably certain. Section 1164c provides that no person shall be admitted to take an examination until he shall have satisfied the commission that he is 21 or more years of age, is of good moral character and has had four years' practical experience in the business, or the equivalent in a reputable college of opticians from which he has received a diploma. The section, however, purports to deal with two classes: those already engaged in the occupation of optician at the time of the passage of the act, and others. This distinction was apparently overlooked in providing for an examination, for the final sentence in the section requires as a condition precedent to the granting of a license that "application for such license shall be made to the commission, together with satisfactory proof of such knowledge, skill, technique and ability on or before March 1, 1936." As the section reads, no person may be granted a license without compliance with the requirement. The effect of this, restricting as it does the granting of licenses to persons possessing the requisite qualifications applying before March 1, 1936 was obviously not that intended by the legislature. A legislative intention, not expressed in some appropriate manner, has no legal existence. We are not at liberty to speculate on any supposed actual intention of the legislature, which can be shown only by its vote. Reasonable certainty is a prime requisite in a statute and its absence invalidates the statute. This rule is of greater insistence when a criminal prosecution, as here, is involved. In the opinion of the court this section in this respect was invalid for uncertainty.

The judgment of conviction was set aside and the cause was remanded to the lower court with direction that the defendant be acquitted.—*State v Van Keegan, 42 A (2d) 352 (Conn, 1945).*

Hospitals: Nursing Home Not Hospital Under Hospitalization Policy.—The plaintiff and his wife sued to recover for hospital expenses incurred by the wife, the suit being based on a policy of hospitalization insurance issued by the defendant insurance company. From a judgment in favor of the plaintiff, the defendant appealed to the court of civil appeals of Texas.

The plaintiffs alleged that Mrs Givens, after vainly seeking admission to a regular hospital in Los Angeles, was admitted, through the request of a Dr Wilson to the nursing home of Mrs Daisy Wharton in the same city. At the time of her admission to the nursing home she possessed a hospitalization policy issued by the defendant which apparently agreed to remunerate her for certain hospital expenses which she might incur. It was stipulated that the word "hospital" as used in the policy, meant

> an institution conducted for the regular reception and treatment of the sick, rendering services and facilities commonly and generally recognized and accepted as hospital services and facilities but shall not include facilities provided in a doctor's office or clinic used merely in the routine treatment of patients and not generally recognized as hospital facilities.

Mrs Givens testified that while she was in the nursing home she was regularly visited and treated by her physician and that the nursing care included private room, bedside attention, special diet and meals. She testified further that she had been a patient at Baylor Hospital, Dallas, Texas, prior to this time and afterward at St Paul's Sanitarium, with the same ailment, and was rendered the same service as was afforded at the nursing home. Mrs Givens admitted on cross examination however, that she could think of no facilities or services which she received at the nursing home but would not have received in her own home if she had hired a private nurse to take care of her there. Mrs Wharton testified that she was a private nurse, that the nursing home was her private home and that hospitals were not permitted in the residential section of Los Angeles where she lived, that her establishment was in no sense a hospital, sanitarium or sanatorium, that her nurses' home would not qualify as a hospital in that it did not have any of the following facilities usually found in hospitals: x-ray equipment, laboratory equipment, sterilization rooms, operating rooms, and drug and chemical laboratories and dispensaries.

The court of appeals said that the contract between the parties provided for the furnishing of services by a hospital, held that the terms of the policy were not ambiguous in defining a hospital, and concluded that the nursing home of Mrs Wharton was not such an institution. Accordingly the judgment in favor of the plaintiffs was reversed.—*Employers Casualty Co v Givens et ux, 190 S W. (2d) 155 (Texas, 1945)*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, March 9, page 668.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: Part III. Various Centers, March. Exec Sec., Mr E S Elwood, 225 S Fifteenth St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral.* New York, Oct 9-14. Sec., Dr Paul M Wood, 745 Fifth Ave., New York 22.

AMERICAN BOARD OF INTERNAL MEDICINE: San Francisco, June 27-29. Final date for filing application is April 15. Asst Sec., Dr W. A Werrell, 1 W Main St., Madison 3, Wis.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Oral.* Chicago, May 5-12. Sec., Dr Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: Chicago, May 22-25. Sec., Dr Dean M Lierle, University Hospital, Iowa City, Ia.

AMERICAN BOARD OF PEDIATRICS: *Written.* Locally, March 22. *Oral.* Cleveland, April 27-28 and San Francisco, July 1-5. Sec., Dr Lee F Hill, 3309 Forest Ave., Des Moines, Ia.

AMERICAN BOARD OF RADIOLOGY: Chicago, Nov 27 to Dec 1. Final date for filing application is Sept 1. Sec., Dr B R. Kirklin, Mayo Clinic, Rochester, Minn.

AMERICAN BOARD OF SURGERY: *Written. Part I.* Various centers, October. Final date for filing application is July 1. Sec., Dr J S Rodman, 225 S 15th St., Philadelphia 2.

AMERICAN BOARD OF UROLOGY: *Oral.* Chicago, February, 1947. Final date for filing application is Nov 15. Sec., Dr Gilbert J Thomas, 1409 Willow St., Minneapolis 4.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Medical Sciences, Philadelphia

210:*701-832* (Dec.) 1945

Convalescence from Surgical Procedures: I. Studies of the Circulation Lying and Standing, of Tremor and of a Program of Bed Exercises and Early Rising. I. Starr and R. L. Mayock.—p. 701.
Id.: II. Studies of Various Physiologic Responses to Mild Exercise Test. I. Starr and R. L. Mayock.—p. 713.
*Coarctation and Acute Dissection of Aorta Associated with Pregnancy. T. D. Kinney, R. E. Sylvester and S. A. Levine.—p. 725.
Combined Acute Vascular Lesions of Brain and Heart: Clinical-Pathologic Study of 15 Cases. G. A. Race and J. R. Lisa.—p. 732.
Relationship Between Cells and Plasma in Cultures of Buffy Coat from Human Blood. G. Draper, Cynthia Pierce and C. W. Dupertuis.—p. 738.
Choriocarcinoma of Testicle. A. J. Gill, G. T. Caldwell and J. L. Goforth.—p. 745.
Hydrometrocolpos in Infancy—Cause of Urinary Retention, Intestinal Obstruction and Edema of Lower Extremities. P. Mooris.—p. 751.
*Use of Penicillinase in Cultures of Body Fluids Obtained from Patients Under Treatment with Penicillin. H. F. Dowling and H. L. Hirsh.—p. 756.
Incidence of Respiratory Infections Following Attack by Primary Atypical Pneumonia Is Unchanged. P. A. Lembcke and L. E. Young.—p. 762.
Infectious Mononucleosis: Analysis of 26 Clinical and 340 Subclinical Cases. R. Vander Meer, C. H. Lutterloh and Jean Pilot.—p. 765.
Comparison in Man of Sulfathiazole and 2-Sulfanilyl-3-5 Dihydrothiazole (Sulfathiazoline, Sulfahydrothiazole). H. F. Flippin, J. G. Reinhold, L. Schwartz and A. H. Comm.—p. 775.
*Treatment of Hyperthyroidism with Combination of Iodine, Thiourea in Small Doses, and Desiccated Thyroid. T. S. Danowski, Evelyn B. Man and A. W. Winkler.—p. 777.
Protest: Recorded Psychiatric Program. A. A. Rosner.—p. 782.
Uterine Bleeding and Extragenital Disturbances. I. L. Frank.—p. 787.
Congenital Hemolytic Anemia: Review of Progress. I. J. Wolman.—p. 798.

Coarctation of Aorta Associated with Pregnancy.—Kinney and his associates report the first instance in which a complete anatomic diagnosis was made antemortem in a case of this sort. A pregnant woman aged 23 died suddenly as the result of rupture of an acute dissection of a coarcted aorta into the pericardium. The onset of sudden severe pain in the throat and the back of the neck, which also involved the upper part of the back and the left arm, directed attention to the possibility of a vascular accident. The routine examination, which revealed absent femoral and abdominal pulsations, quickly focused attention on the possibility of coarctation of the aorta. This readily explained the basal systolic murmur and led the author to listen to the interscapular region, where the same murmur was audible. Confirmatory evidence was obtained when a pulsating artery was detected in the left midback, and blood pressure could not be measured in the legs. The clinical diagnosis was made even though the x-ray examination at first overlooked changes in the ribs. After the diagnosis of coarctation had been established, the explanation for the symptoms appeared to be rupture of the aorta.

Penicillinase in Body Fluids from Patients Being Treated with Penicillin.—Dowling and Hirsh investigated the effect of blood culture medium on penicillinase. They found that penicillinase does not lose its ability to neutralize penicillin when both substances are added to veal infusion broth and kept at incubator, room or refrigerator temperature for four weeks. In the concentrations in which it is used for this purpose, penicillinase has no inhibitory effect on the growth of bacteria. Among 26 patients from whom parallel cultures were taken, with and without penicillinase, the presence of penicillinase in the culture medium gave information on 12 patients which was not obtainable or which was delayed or doubtful when the culture was taken without the benefit of penicillinase. Among 186 specimens of body fluids obtained from patients under treatment with penicillin, cultured in parallel with and without penicillinase in the culture medium, 36 showed better growth in the medium containing penicillinase. It is recommended that penicillinase be used routinely in cultures of body fluids obtained from patients under treatment with penicillin.

Iodine, Thiourea and Desiccated Thyroid in Hyperthyroidism.—In the treatment of 12 patients with hyperthyroidism Danowski and his associates administered 5 to 15 drops daily of strong solution of iodine. After the remission with iodine therapy had reached its maximum, thiourea was started in doses varying between 0.05 and 0.28 Gm. once daily. Patients whose level of serum precipitable iodine fell below normal received 0.06 Gm. of desiccated thyroid daily as well. In some instances iodine medication was later discontinued. The serum precipitable iodine, the basal metabolic rate, the body weight, the pulse rate, erythrocyte and leukocyte counts, the size of the thyroid gland and the general clinical condition were carefully followed. Preliminary iodine medication diminished the severity of the hyperthyroidism for a time in most of the patients but failed to produce a complete and lasting remission. Administration of thiourea as well as iodine resulted in a complete disappearance of the signs of thyroid overactivity and depression of serum precipitable iodine to normal or subnormal in 11 out of 12 instances. In the patients who required and were given maintenance doses of desiccated thyroid the concentration of precipitable iodine in the serum promptly returned to normal. Evidently thiourea in daily doses of 0.280 Gm. can produce a satisfactory sustained remission in cases of hyperthyroidism which have previously been brought into partial remission by iodine medication alone. This fact disposes of any theory that previous treatment of the hyperthyroidism with iodine seriously interferes with the action of thiourea. Cases of toxic adenoma and of diffuse goiter both respond.

American J. Obstetrics and Gynecology, St. Louis

50:595-780 (Dec.) 1945

*Pathogenesis of Postsalpingectomy Endometriosis in Laparotomy Scars. J. A. Sampson.—p. 597.
Therapeutic Aspects of Uterotubal Insufflation in Sterility. I. C. Rubin.—p. 621.
*Sweat Gland Tumors of Vulva, Benign (Hidradenoma) and Malignant (Adenocarcinoma). E. Novak and R. R. Stevenson.—p. 641.
Ten Years of Cesarean Section at Boston Lying-In Hospital. F. C. Irving.—p. 660.
Review of Problem of Cancer of Cervix Since Use of Radium in 1912. B. M. Anspach.—p. 681.
*Curability of Granulosa Cell Tumors. G. E. S. Jones and R. W. Te Linde.—p. 691.
Diet Regulation and Controlled Weight in Pregnancy. W. J. Dieckmann, Dorothea F. Turner and Barbara A. Ruby.—p. 701.
Government and Maternal Welfare. F. L. Adair.—p. 713.
Rh Factor in Obstetrics. H. F. Traut, B. C. McIvor, J. Howard, S. P. Lucia and L. Charvet.—p. 722.
Surgical Correction of Congenital Aplasia of Vagina: Evaluation of Operative Procedures, End Result and Functional Activity of Transplanted Epithelium. N. F. Miller, J. R. Willson and J. Collins.—p. 735.
Hypertrophy of Uterus. A. H. Curtis.—p. 748.
Aneurysm of Splenic Artery with Rupture, a Rare Complication of Pregnancy. W. C. Danforth.—p. 753.
Search for Female Sex Hormones. R. T. Frank.—p. 757.
Role of Porro Cesarean Section in Modern Obstetrics. K. M. Wilson.—p. 761.
Ectopic Gestation. L. E. Burch and J. Seitchik.—p. 765.

Postsalpingectomy Endometriosis in Laparotomy Scars.—According to Sampson the pathogenesis of endometriosis in laparotomy scars depends on the type of the original operation and the anatomic conditions or relations resulting from it. The author has encountered 17 patients with laparotomy scar endometriosis in the gynecologic service of the Albany Hospital. In a case in which salpingectomy had not been done the scar endometriosis followed a myomectomy. The scar endometriosis was derived from the mucosa of a tubal stump by continuous invasion in 10 specimens. It probably arose in a similar manner in 3 others. In 2 additional specimens such an origin could not be excluded. Transplantation endometriosis was possibly present in 3 scars. In the remaining 2 cases two separate foci of endometriosis were found in each scar, one of which arose by continuous invasion from the mucosa of a stump. The other possibly developed as a result of transplantation. The postsalpingectomy scar endometriosis has resulted from the outgrowth of sprouts of the mucosa of the tubal stump. These, as tubules, invade the tissues about the stump, usually the uterine cornu. From here they spread to the portion of the laparotomy scar attached to that cornu. Injecting the uterine cavity with colored gelatin has been helpful in the study of these cases, in 12 of which the uterine cavity was injected. Gelatin was found in the scar endometriosis in 8 of these, thus demonstrating the continuity of their tubules with the uterine cavity. The most dramatic demonstration of the value of the injection method in ascertaining the pathogenesis of postsalpingectomy scar endometriosis was the presence of gelatin in the tubules of a scar in which the only contact with the uterus was the remains of a drainage tract 7 cm. long. This specimen likewise showed the ability of müllerian tissue to extend itself by continuous growth and invasion for a long distance. The mucosa of the left tubal stump had grown out through the end of the stump into the lumen of the drainage tract, entirely lining it with columnar epithelium. The drainage tract ended, as such, at the base of the scar. Here sprouts had arisen from its mucosa and had invaded the scar actually to the skin epithelium. The total distance traveled by the continuous extension and invasion was 11 centimeters. The ectopic mucosa, which can be shown to have had its origin in the mucosa of a tubal stump and to have grown from it by continuous invasion, may not only retain the structure of the tubal mucosa but may also assume the structure and function of the uterine mucosa, including its reaction to menstruation and pregnancy, thus producing true endometriosis. Tubules play the more prominent role in some specimens of scar endometriosis, and glands in others; they are the leaders of the invasion. A tubule is a müllerian gland without appreciable stroma about it, and a gland is a müllerian tubule clothed in stroma.

Sweat Gland Tumors of Vulva.—Novak and Stevenson report 15 cases of sweat gland tumors of the vulva. These appear as small and innocent looking growths on or near the vulva, but to one not familiar with their microscopic appearance the microscopic picture is apt to be rather startling and perhaps lead to the diagnosis of adenocarcinoma. In only 1 case in the literature, that of Eichenberg, has there been unimpeachable evidence of malignant change, both clinical and microscopic. All other cases have been clinically benign and all have been cured by simple excision. It is possible that some instances of the rare primary adenocarcinoma of the vulva may be of sweat gland origin. Such an origin is difficult to establish. The ages of the patients with vulvar hidradenoma observed by the authors varied between 28 and 67 years. The most common location of the lesion is on the labia majora, and next most common is in the paralabial skin or perineum. In a few cases the growth has been situated on a labium minus. This is of interest, since many histologists believe that sweat glands are not normally found in the lesser labia. This may be true of the ordinary sweat glands, but one cannot be so sure as to glands of the apocrine type, which are rather closely related to sebaceous glands, of which there are enormous numbers in the labia minora. The authors suggest that the apocrine gland derivation of the vulvar sweat gland tumors may have been overemphasized. All of the 15 patients observed by them were white, in spite of the fact that a large proportion of clinic patients are Negroes. The lesion is always small, usually not over 1 cm. in diameter. There is no pain, and frequently the nodule is not noticed by the patient. There is considerable variation in the microscopic appearance of these hidradenomas.

Curability of Granulosa Cell Tumors.—Jones and Te Linde point out that the collection of adequate statistics on the malignancy of the granulosa cell tumor is difficult, as the incidence of late recurrence in this tumor group makes five or even ten year follow-up studies inadequate. This fact has been brought to the attention of the authors by the recent return of 3 patients, all having recurrent granulosa cell tumors fifteen, sixteen and nineteen years respectively after their original operation. All 3 patients have died eighteen, twenty and twenty-one years respectively following the removal of the primary tumor, in spite of the fact that the tumors were well encapsulated and showed no evidence of metastasis or implantation at the original operation. One case recurred in spite of a bilateral salpingo-oophorectomy and a hysterectomy. One case with widespread inoperable abdominal metastases responded well to high voltage x-ray therapy over a period of three years, but a subsequent recurrence of the growth proved refractory to treatment. Total urinary estrogen values were not extremely high in 2 cases but within the range of values for normal women. The values were well above those usually found in this laboratory for postmenopausal women, into which age group all 3 patients fell at the time of recurrence. All 3 cases exhibited clinical signs of estrogenic activity on recurrence of the tumor.

American Journal of Ophthalmology, Cincinnati

28:1309-1417 (Dec.) 1945

Dendritic Keratitis Associated with Chronic Malaria. R. D. Harley and R. F. Kaiser.—p. 1309.
Comparative Study of Bacteriologic Flora of Nasal and Nasopharyngeal Membranes of Patients with Certain Ocular Disorders. C. Berens and Edith L. N. Cumming.—p. 1313.
Allergic Retinosis. J. W. Bettman.—p. 1323.
Statistical Analysis of 1,000 Consecutive New Eye Patients. A. De Rötth. —p 1329.
Method for Extraction of Dislocated Lenses from Vitreous. G. Bonaccolto.—p. 1335.
Restoration of Patency of Nasolacrimal Duct by Means of Vitallium Tube: Preliminary Report. W. E. Muldoon.—p. 1340.
Experiences with Surgery of Anophthalmic Orbit. A. G. DeVoe. —p. 1346.
Megalocornea. E. Rosen.—p. 1352.

American J. Orthodontics and Oral Surgery, St. Louis

31:597-752 (Dec.) 1945

Arrest of Hemorrhage in Two Hemophiliacs Following Dental Extractions. B. G. Anderson and G. A. Kentros.—p. 697.
*Experimental Chronic Fluorine Intoxication: Effect on Bones and Teeth. W. H. Bauer.—p. 700.
Chemotherapy in Oral Surgery. C. C. Bruno and S. Horoschak.—p. 720.
Prevention of Endodontal Pathosis. C. O. Dummett Sr.—p. 725.
Cancer of Oral Mucosa and Circumoral Areas. B. J. Masuda.—p. 730.
Cleft Palate Prosthesis: Treatment of Case with Hollow Ball Obturator. B. B. Cantor.—p. 740.
Case Reports: No. 94. Complete Luxation of Maxillary Anterior Teeth. M. A. Cashman.—p. 744.

Effect of Chronic Fluorine Intoxication on Bones and Teeth.—Bauer kept a bitch and puppies between the ages of 28 and 98 days on a fluorine diet. The bitch received 0.4 Gm. of sodium fluoride daily; some of the puppies were suckled by their fluorine poisoned mother, while others were fed mother's milk for four weeks and afterward received food containing 0.1 to 0.2 Gm. of sodium fluoride. Chronic fluorine intoxication of puppies produced extensive systemic changes in the bones and the developing teeth. The intensity depended on the age of the animal, the dose and the duration of the administration of sodium fluoride. Small doses of fluorine administered over a long time and started at an early age resulted in a dense periosteal bone formation. In puppies fed exclusively the milk of their fluorine poisoned mother, bone changes were observed prior to changes of the tooth buds. The cells of the periosteum were apparently stimulated to assume osteoblastic function even before the enamel forming cells were affected. That in these experiments changes in the bones and the developing teeth could not be prevented or alleviated by an antirachitic diet and that calcification of a startling amount of periosteal and endosteal bone occurred in spite of continued administration of fluorine suggest that the pathogenesis of the bone and tooth lesions in rickets and fluorosis differs. The enzymatic and protoplasmic action of fluorine produced rachitic-like changes in the bones and the dentin of puppies, but its effect on the bones of the older dogs and the enamel in general differed from rickets. These experimental studies and recent observations on dental fluorosis in children and adults associated with bone changes indicate the necessity of a thorough roentgenographic examination of the skeleton of children showing "mottled enamel" in fluorine areas in this country.

American Journal of Physiology, Baltimore

144:637-744 (Oct.) 1945

Effect of Decompression of Human Metabolism During and After Exercise. S. F. Cook and E. Strajman.—p. 637.
Effect of Varied Thiamine Intake on Growth of Rats in Tropical Environment. Ann O. Edison, R. H. Silber and D. M. Tennent.—p. 643.
Interrelations of Adrenal and Sex Glands in Parabiotic Rats. R. M. Pinto.—p. 652.
Effect of Isolated Posterior Pituitary Principles on Survival of Primitive Respiratory Center in Decapitated Rat Head. W. A. Hiestand and D. C. Brodie.—p. 658.
Metabolic Changes in Shock After Burns. H. N. Harkins and C. N. H. Long.—p. 661.
Effects of Hepatic Anoxia on Respiration of Liver Slices in Vitro. A. E. Wilhelmi, Jane A. Russell, F. L. Engel and C. N. H. Long.—p. 669.
Some Aspects of Nitrogen Metabolism of Liver Tissue from Rats in Hemorrhagic Shock. A. E. Wilhelmi, Jane A. Russell, Mildred G. Engel and C. N. H. Long.—p. 674.
Effects of Anoxia and Hemorrhage on Metabolism of Cerebral Cortex of Rat. A. E. Wilhelmi, Jane A. Russell, C. N. H. Long and Mildred G. Engel.—p. 683.
Action Potentials of Stomach. E. Bozler.—p. 693.
Effect of Thiocyanate on Gastric Potential and Secretion. W. S. Rehm and A. J. Enelow.—p. 701.
Streamline Flow in Arteries of Dog and Cat: Implications for Work of Heart and Kinetic Energy of Blood Flow. H. J. Ralston and A. N. Taylow.—p. 706.
Histamine-like Substance Present in Nasal Secretion of Common Cold and Allergic Rhinitis. Elizabeth Troescher-Elam, G. R. Ancona and W. J. Kerr.—p. 711.
Influence of Calcium Intake Level on Complete Life Cycle of Albino Rat. H. L. Campbell and H. C. Sherman.—p. 717.
Afferent Nerves Excited by Intestinal Distention. R. C. Herrin and W. J. Meek.—p. 720.
Observations on General Skin Temperature Responses to Local Heating of Human Subjects in Cold Environment. C. Martinez and M. B. Visscher.—p. 724.
Centripetal Regeneration of Eighth Cranial Nerve Root, with Systematic Restoration of Vestibular Reflexes. R. W. Sperry.—p. 735.
Effects of Thyroid Feeding, Thyroidectomy and Adrenalectomy on Thiourea Intoxication in Rats. D. Marine and Emil J. Baumann.—p. 742.

American Journal of Surgery, New York

70:275-418 (Dec.) 1945

Hemorrhage as Most Frequent Cause of Maternal Death: Analysis of Puerperal Deaths in Brooklyn, 1944. C. A. Gordon.—p. 277.
*Intravenous Obstetric Anesthesia: Preliminary Report. F. M. Allen.—p. 283.
Surgical Management of Femoral Vein Thrombosis. E. L. Lowenberg.—p. 291.
Simplification of Split Skin Grafting: Gum Acacia Technic. L. R. Rubin.—p. 302.
Control of Thyroid Storm. I. Schimmel.—p. 308.
Experimental Transmission of Lymphogranuloma Venereum Virus Through Placenta. H. Hellendall.—p. 320.
*Use of Thrombin (Topical) in Transurethral Resection of Prostate. C. G. Bandler, P. R. Roen and R. Stept.—p. 337.
Urinary Stress Incontinence in Female: Combined Gynourologic Approach to Correction. W. J. Reich, J. L. Wilkey and H. E. Silverman.—p. 341.
Phthalylsulfathiazole-Sulfathalidine: Clinical Evaluation in 122 Patients with Proctologic and Related Conditions. G. Angelo.—p. 354.
Method of Treatment for Pilonidal Sinus. J. K. Berman.—p. 360.
Refrigeration Anesthesia. D. W. Melick.—p. 364.
Treatment of Intertrochanteric Fractures of Femur. J. L. Posch and W. E. Abbott.—p. 369.
Newer Postoperative Trends. D. C. Daughtry.—p. 374.
Bicipital Tendovaginitis. I. W. Kaplan and B. L. Hawkins.—p. 383.

Intravenous Obstetric Anesthesia.—Allen's impression is that the infusion of procaine should usually not be begun in the earliest stage of labor. In the second stage, when contractions are stronger and the suffering greater, the analgesic effect is most welcome. With intravenous procaine infusions two grades of obstetric analgesia are obtainable, provided rare cases of hypersensitiveness are excluded by tests. Small dosage, not sufficient to cause dizziness or other subjective symptoms, can dull the pains especially during the second stage of labor. This effect is interpreted as being dependent wholly or chiefly on the peripheral nerves. It fails to give much relief during third stage delivery and subsequent repair operations. The advantages are the considerable alleviation of suffering with convenience and complete safety. Larger dosage, by an apparent central action, induces a state of dim consciousness in which the patient is more or less unresponsive but retains some awareness and memory of events. Touch sensations may persist, but anesthesia, in the sense of absence of pain, can be maintained during delivery and necessary operations. The only difficulty encountered thus far has been the occasional liability to convulsions. These have not been disastrous and can apparently be prevented by preliminary administration of barbiturates. The advantages are the convenient, flexible and rapidly controllable anesthesia, the noninterference with uterine contractions in the active stage and the almost immediate recovery without headache, nausea, disorientation or other after-effects. The apparent safety for both mother and child still requires confirmation by larger experience.

Thrombin (Topical) in Transurethral Resection of Prostate.—Bandler and his associates employed thrombin (topical) in 50 resections of the prostate for hypertrophy or carcinoma and have compared their results with 50 resections immediately preceding in which bladder irrigations were used in the postoperative management. Results with thrombin (topical) were very satisfactory. Postoperative bladder irrigations were completely eliminated. Postoperative bleeding was decreased in amount and duration. The inlying catheter could be removed earlier, and there were fewer postoperative hemorrhages when thrombin was employed than when irrigations were relied on in the postresection period. The use of 10,000 units was found to be more efficacious than the 5,000 unit preparation. There were no toxic effects nor other disadvantages in the use of thrombin.

American Review of Soviet Medicine, New York

3:97-192 (Dec.) 1945

Venereal Disease Control in U. S. S. R. L. N. Mashkilleison and V. A. Rakhmanov.—p. 100.
Bismuth in Treatment of Syphilis. N. S. Vedrov.—p. 106.
*Intracardiac Blood Transfusion. B. I. Iokhveds.—p. 116.
Struggle Against Malaria. P. Sergeyev.—p. 120.
Fulminant Type of Tertian Malaria. E. M. Tareyev, A. A. Gontayeva and S. S. Rotenburg.—p. 125.
Agglutination of Erythrocytes by Influenza Virus. A. K. Shubladze and V. D. Soloviev.—p. 130.
Agglutination of Erythrocytes by Grip (Influenza) Virus: Part II. V. D. Soloviev, A. K. Shubladze and N. I. Meltzer.—p. 134.
Subcutaneous Anavaccine VIEM for Dysentery. A. A. Klimentova.—p. 135.
Ixodidae Ticks of Western Siberia as Reservoirs of Tularemia. S. P. Karpov and V. M. Popov.—p. 140.
Problems of Wound Sepsis. I. G. Rufanov.—p. 143.
Agonal States and Clinical Death: Problems in Revival of Organisms. V. A. Negovski.—p. 147.

Intracardiac Blood Transfusion.—Iokhveds reports 2 cases of severe shock and massive hemorrhage in which isotonic solution of sodium chloride, glucose and blood were used for reviving intracardiac blood flow. The first patient was a Red Army soldier aged 34 to whom blood transfusion through a needle inserted into the right ventricle had restored consciousness. Severe myocardial damage was probably responsible for death that occurred two and a half hours later. In spite of the flabbiness of the myocardium, the needle, which was present in the heart for about fifteen minutes while the heart was contracting, had left only a minute puncture. The second patient, a soldier aged 18, was given an injection of blood and salt solution into the left ventricle. It was believed that the contracting force of the recently revived heart and the pressure of the solution being injected would be insufficient to overcome the resistance of the capillary network in the lungs, so that only insignificant amounts would reach the left side of the heart. Injection of these solutions directly into the left ventricle causes even the first and comparatively weak contractions of the heart to reestablish the blood supply to the vitally important brain centers, thus providing an antishock effect. In addition, the increased volume output of the left ventricle independently improved the coronary blood flow. The patient improved rapidly. The intracardiac injection was made eight to ten seconds after all clinical symptoms of death had appeared. When blood and other liquids are to be transfused into the right chamber, the needle should be inserted into the lower part of the fourth left intercostal space, one fingerbreadth from the left margin of the sternum. The left ventricle will be entered when the needle is inserted in the same interspace and 2.5 to 3.0 cm. to the left of the left margin of the sternum. The needle should be 7.0 to 8.0 cm. long, its inner diameter 0.6 to 0.8 mm. If the initial 80 to 100 cc. of blood or other liquid is ineffective, further transfusion will be without effect.

Archives of Dermatology and Syphilology, Chicago

52:301-450 (Nov.-Dec.) 1945

*Carbohydrate Metabolism and Skin. E. Urbach and J. W. Lentz. —p. 301.
Epidermolysis Bullosa: Suggestion as to Possible Causation. M. N. Winer and J. M. Orman.—p. 317.
Acne Vulgaris Occurring in Tropics in Pigmentary and Pilosebaceous Nevus. H. V. Allington.—p. 322.
Effect of Endocrine Substances on Adult Human Scalp. H. R. Rony and S. J. Zakon.—p. 323.
Epidermodysplasia Hystricoidis Bullosa: Report of Case with Histopathologic Study. J. G. Reyes.—p. 328.
Dermatology in Army Station Hospital Serving in Italy. E. Ladany. —p. 335.
Fixed Bullous Eruption Due to Sulfathiazole. J A. McGuire and B. Shaffer.—p. 342.
Treatment of Dermatoses with Vasodilators. F. R. Schmidt.—p. 344.
Pigmentation of Hair on Transplanted Skin in Hooded Rats. E. O. Butcher.—p. 347.
Lichen Sclerosus et Atrophicus in Childhood. C. W. Laymon.—p. 351.
Differentiation of Lepromatous from "Neural" Leprosy: Basis, Method and Report of 5 Cases. H. L. Arnold Jr.—p 354
Sandals and Hygiene and Infections of Feet. W. J. Nickerson, L. Irving and H. E. Mehmert.—p. 365.
Adrenal Glands in Pemphigus Vulgaris: Report of Six Autopsies and Review of Literature.—p. 369.
Cutaneous and Subcutaneous Lesions of Lower Limbs in Connection with Veins: Differential Diagnosis. M. Wolf.—p. 376.
Dermatitis Venenata Following Use of Penicillin Ointment. L. S. Markson.—p. 384.
New Cutaneous Bactericidal Agent Used in Soap: Further Practical Studies. E. F. Traub, C. A. Newhall and J. R Fuller.—p. 385.
Dermatitis Medicamentosa Associated with Secondary Polycythemia: Report of Case. S. S. Robinson and S. Tasker —p. 389.
Waterhouse-Friderichsen Syndrome: Report of Case. H. M. Johnson. —p. 391.
Colloidoclastic Shock Following Injection of Oxophenarsine Hydrochloride (Mapharsen): Report of Case. A. L. Shapiro.—p. 395.
Carbarsone in Treatment of Pemphigus: Preliminary Report. R. P. Little.—p. 397.

Carbohydrate Metabolism and the Skin.—Urbach and Lentz review the results of studies on patients with various skin diseases with and without diabetes and on various species of animals. While in human beings the free sugar content of the skin is only two thirds of that of the blood, the skin of many species of animals contains more free sugar than their blood. Therefore results obtained in investigations on animal skin are not applicable to conditions in human beings. The sugar level of the skin is dependent on the diet. This explains the efficacy of a low carbohydrate diet in diabetic dermatoses. A diet high in fat results in a distinct decrease in the sugar content of the skin, while that of the blood remains stationary. A blood sugar tolerance test is indispensable in order to determine whether or not a dermatosis is of diabetic origin. The type of curve indicates whether a pathologic reaction is brought on by excessive mobilization of dextrose by an imbalance in the sympathetic or the endocrine system or by a decrease in the capacity to assimilate sugar, i. e. by a lowered sugar tolerance, as in diabetes. In pancreatic diabetes the ratio between the fasting skin sugar and the blood sugar is increased. The sugar content of the skin is almost doubled after a sugar tolerance test. It takes the skin sugar level five hours or longer to return to normal. The prolonged storage of sugar in the skin may perhaps explain its great susceptibility to infection in diabetes. In mild diabetes with cutaneous manifestations the ratio of skin sugar to blood sugar is relatively high (65.7 per cent), whereas the ratio is rather low in cases without cutaneous symptoms. Extensive inflammation or infection of the skin can produce a metabolic disturbance of the carbohydrate metabolism which is of peripheral origin and in no way connected with pancreatic diabetes. These facts, together with the presence of cleavage and end products of the intermediary carbohydrate metabolism in the skin, as well as the presence of glycolytic enzymes and the fact that insulin-like substances can be derived from cutaneous tissue, would seem to underscore the important role played by the skin both in intermediary carbohydrate metabolism and as a storage organ.

Archives of Internal Medicine, Chicago

70:189-256 (Oct.) 1945

*Esophageal Lesions Associated with Acrosclerosis and Scleroderma. A. M. Olsen, P. A. O'Leary and B. R. Kirklin.—p. 189.
Neurologic Complications During Meningococcic Meningitis Treated with Sulfonamide Drugs. T. W. Farmer.—p. 201.
An Account of Stock. R. Fitz.—p. 210.
Absence of Electrocardiographic Changes in Tsutsugamushi Fever (Scrub Typhus): Report of 200 Consecutive Cases. W. L. Howell.—p. 217.
*South American Trypanosomiasis (Chagas' Disease). V. Moseley and H. Miller.—p. 219.
Sickle Cell Anemia in White Patients with Ulcers of Ankles: Report of 2 Cases. A. C. Woofter, W. S. Dick and W. L. Bierring.—p. 230.
Clinical Syndrome in Patients with Pulmonary Embolism. E. L. Sagall, J. Bornstein and L. Wolte.—p. 234.
Blood: Review of Recent Literature. F. H. Bethell, C. C. Sturgis, R. W. Rundles and Muriel C. Meyers.—p. 239.

Esophageal Lesions Associated with Acrosclerosis and Scleroderma.—Olsen and his associates reviewed the records of all cases at the Mayo Clinic from 1930 to 1943 inclusive in which diagnoses of scleroderma or acrosclerosis had been made with respect to the occurrence of esophageal symptoms or signs. In 36 of approximately 350 cases of scleroderma or acrosclerosis dysphagia occurred or lesions of the esophagus were demonstrated. In approximately 10 per cent of these cases complaints referable to the esophagus were made. The most common complaint was dysphagia. Frequently there was also substernal burning after meals, especially when the patient was lying down. Positive roentgenographic or endoscopic evidence was demonstrated in 18 cases. Dilatation of the esophagus similar to that seen in cardiospasm was observed in 7 cases, and hiatal hernia with intrathoracic stomach was demonstrated in 9 cases. In 2 cases sclerodermic changes were demonstrated in the esophageal wall. In acrosclerosis symptoms of Raynaud's disease are present prior to the dermatologic changes or coincident with them. Thirty-three of the 36 patients who had esophageal symptoms presented the clinical syndrome of acrosclerosis. All the 18 patients for whom conclusive roentgenographic or endoscopic evidence was obtained had acrosclerosis. Sclerodermic changes in the connective tissues of the esophagus are chiefly responsible for the esophageal disturbances, which are extremely uncommon in Raynaud's disease per se. Reduction or absence of muscular activity in the wall of the esophagus and shortening of the esophagus apparently result from sclerodermic involvement. Disturbances of the autonomic nervous system may play some part in the causation. Clinical diagnoses of cardiospasm and hiatal hernia of the short esophagus type are made most frequently in these cases. Stenosis of the lower part of the esophagus and esophagogastric junction may occur with hiatal hernia as the result of chronic inflammation of the lower part of the esophagus. This inflammation is the result of incompetence of the cardiac sphincter with regurgitation of gastric secretions. Treatment of esophageal lesions of acrosclerosis consists in passage of sounds over a previously swallowed thread. Fairly satisfactory results have been obtained.

South American Trypanosomiasis.—Although Chagas disease has been considered as one limited to South or Central America, it could become endemic in the United States. Naturally infected triatomas (the insect vector) and ones capable of acting as vectors have been found in Arizona, California, Florida, New Mexico, Texas and Utah. Moseley and Miller observed Chagas disease in 2 American soldiers. Both were infected by the trypanosome in Panama. In contradistinction to the cases previously reported from Panama the infection gave rise to a serious illness in both soldiers. These are the first 2 instances in which the infection has been diagnosed in other than native born inhabitants in this country. Serial electrocardiograms were made, and the cardiac manifestations of the disease were studied in 1 case. Articular symptoms and signs may occur as a manifestation of this disease and these and many of the other features of acute Chagas disease may closely simulate rheumatic fever. Lymphocytosis appears to be a laboratory finding of clinical significance in Chagas disease. In the treatment of these 2 cases antimony was of therapeutic value.

Archives of Physical Medicine, Chicago

26:741-794 (Dec.) 1945

Work Therapy in an Army General Hospital. H. L. Rudolph.—p. 741.
Challenge of Crutches: IV. Prescribing Crutch Gaits for Orthopedic Disabilities. G. G. Deaver and Mary E. Brown.—p. 747.
New Uses of Procaine (Preliminary Communication). F. M. Allen. —p. 759.
Exercising Device for Increasing Joint Action. L. B. Newman.—p. 762.
Stockinet Adhesive Chest Strapping. B. C. Wiley.—p. 764.
Physical Medicine in Army Air Forces Convalescent Hospital. H. A. Rusk and K. E. Voldeng.—p. 766.

Archives of Surgery, Chicago

51:125-204 (Oct.) 1945

Lesions of Spinal Epidural Space Producing Cord Compression. H. A. Shenkin, R. C. Horn Jr. and F. C. Grant.—p. 125.
*Resection of Lung in Treatment of Pulmonary Tuberculosis. O. C. Brantigan.—p. 147.
Studies on Muscle Atrophy: Method of Recording Power in Situ and Observations on Effect of Position of Immobilization on Atrophy of Disuse and Denervation. J. Eisenhauer and J. A. Key.—p. 154.
Reestablishment of Pancreatic Secretion into Intestine After Division of Pancreas: Experimental Study. H. G. Smithy, H. R. Pratt-Thomas and L. M. Mace.—p. 164.
Intussusception of Vermiform Appendix: Report of Case. F. M. Ingersoll and J. V. Meigs.—p. 172.
Progress in Orthopedic Surgery for 1944: Review Prepared by an Editorial Board of American Academy of Orthopedic Surgeons: I. Diseases of Growing and Adult Bone. J. A. Siegling.—p. 174.
Id.: II. Congenital Deformities. J. H. Kite.—p. 177.
Id.: III Tumors of Bone and Synovial Membrane. H. E. Meyerding. —p. 181.
Id.: IV. Conditions Involving Hip Joint. J. J. Fahey.—p. 188.
Id.: V. Conditions Involving Foot and Ankle. D. W. Hauser and R. P. Montgomery.—p. 195.

Resection of Lung in Pulmonary Tuberculosis.—Brantigan says that, if the contralateral lung is free of disease, *pulmonary resection appears to be the best treatment after the* occurrence of irreparable damage, such as bronchial stenosis, bronchial disease with or without ulcerations not responding to bronchoscopic treatment and after an unsuccessful thoracoplasty. *Pulmonary resection is the only form of treatment that* can be used effectively when pneumothorax or phrenic paralysis, with or without pneumoperitoneum, does not control disease at the base of the lung, a cavity against the mediastinal surface in the lower half of the chest, or a cavity in the middle portion of a lung. Criticism might be justified when a lobectomy of the upper lobe is elected as a method of choice instead of thoracoplasty. He reports 9 cases in which lobectomy was done, with 1 fatality. In 5 of the 9 cases endobronchial disease existed. Pulmonary resection for tuberculosis is a relatively safe operation. The late end results are as yet unknown. *As long as the postoperative condition is an improvement over* the preoperative one, definite benefit has been achieved even though the disease is not cured.

Arkansas Medical Society Journal, Fort Smith

42:107-128 (Nov.) 1945

Hemorrhagic Diathesis. J. N. Compton.—p. 107.
Evaluation of Continuous Caudal in Small Hospital. J. K. Walker. —p. 112.
Modern Concepts of Vascular Disease. C. T. Chamberlain.—p. 114.

42:129-154 (Dec.) 1945

Brief Discussion of Thermal Burns. W. G. Cooper.—p. 129.
Modern Concepts of Cardiovascular Disease: Heart Failure. C. T. Chamberlain.—p. 131.

Bulletin New York Academy of Medicine, New York

21:631-696 (Dec.) 1945

*Value of Protein and Chemical Components (Amino Acids) in Surgical Repair. Co Tui.—p. 631.
Factors Determining Dosage of Penicillin in Treatment of Infections. C. H. Rammelkamp and W. M. M. Kirby.—p. 656.
Shock Therapy of Psychoses: Evidences For and Against Damage. N. D. C. Lewis.—p. 673.

Value of Protein in Surgical Repair.—Co Tui stresses that proteins are essential to wound healing, the maintenance of tissue integrity and expeditious convalescence. Protein deficiency endangers all three. A patient can become protein deficient as a result of inadequate intake and increased nitrogen output or a combination of these two factors. Decreased intake may be due to the patient or to neglect on the part of the attending staff. Increased output may be due to increased metabolic loss and to the loss through exudates. The ceiling of nitrogen intake in natural food is naturally low, and consequently natural food is often inadequate to replenish the increased protein loss in disease and injury. Studies in cases of burns and of postoperative gastrectomy, cholecystectomy and herniotomy suggest that convalescence can be shortened, strength and weight conserved by full caloric and nitrogen replacement immediately postoperatively and that there may be a critical range of nitrogen intake for each disease category. The protein hydrolysates are indispensable in many disease conditions and can be used with greater elasticity than natural food. In the course of study on the value of protein hydrolysates a new treatment of peptic ulcers has been evolved. *Protein hydrolysates for clinical use must fulfil* a number of criteria, and clinicians using them must be quantitatively minded. The nutritional status can be studied by four methods: (1) the nitrogen balance, (2) the plasma protein curve, (3) the body weight curve and (4) the bedside ergograph.

Bull. of the U. S. Army Med. Dept., Washington, D. C.

5:1-122 (Jan.) 1946

Balanced Suspension and Fractures of Femur. V. L. Hart.—p. 57.
Nutritional Aspects of Care of Paralyzed Patients. H. A. Harper.—p. 63.
Simple Method of Removing Vesical Calculi in Paraplegic Patients. L. W. Hewit.—p. 68.
Jaw Relationship Records—Vertical Dimension and Centric. E. S. Smith. —p. 70.
Psychiatry in Fifth Army Area. H. S. Wright.—p. 73.
Clinical Experience with Snake Bites on Okinawa. W. B. Martin.—p. 79.
Treatment of Patient at Sea. H. H. Livingston.—p. 82.
Relation of Weil-Felix Reaction to Clinical Course of Tsutsugamushi Disease. E. N. Irons and C. A. Armbrust Jr.—p. 85.
Bacterial Flora in Cantonment Type Surgical Ward. C. M. Furtherer and Marian Hofmann.—p. 100.
Radiation Characteristics of Field X-Ray Unit Used for Superficial Therapy. A. L. Bachman.—p. 103.

California and Western Medicine, San Francisco

63:205-258 (Nov.) 1945

Public Health and Preventive Aspects of Streptococcal Infections. L. A. Rantz.—p. 211.
Carcinoma of Rectum. W. H. Daniel.—p. 213.
Survey of Over 13,000 Fractures in Employees of Richmond Shipyards. C. C. Cutting, L. Fisher and N. Neadoff.—p. 216.
Cardiac Pathology as Related to Anesthesia. C. C. Langsdorf.—p. 218.
Filariasis. R. B. Schutz.—p. 221.
Atelectasis of Newborn: Treatment by Bronchoscopic Drainage. H. Owens.—p. 225.
Staphylococcus Aureus [illegible] Treatment with Penicillin—Report of Case. R. E. Hoyt [illegible] 6.
Blood Transfusions at th[illegible] J. C. Geiger.—p. 227.

63:259-312 (Dec.) 1945

Technic of Carotid Sinus Stimulation. J. M. Askey.—p. 266.
Variations in Size of Human Stomach. A. J. Cox.—p. 267.
Anatomic Demonstration of Anovulatory Menstrual Cycle. G. L. Laqueur.—p. 268.
Introspection and Orbital Cortex. J. M. Nielsen.—p. 269.
Early Public Health in California. G. P. Jones.—p. 275.

Canadian Medical Association Journal, Montreal

53:527-624 (Dec.) 1945 Partial Index

Human Requirements of Thiamine. E. G. Young.—p. 527.
Air Borne Fungus Spores in Manitoba: A Six Year Survey, 1939-1944. C. H. A. Walton and Margaret G. Dudley.—p. 529.
Psychiatry in Industry. D. E. Cameron.—p. 538.
*Indications for and End Results of Fenestration Operation. J. A. Sullivan.—p. 543.
Corneal Transplantation. J. Audet-Lapointe.—p. 548.
Source of Danger in Thoracentesis and Prevention. W. E. Kunstler. —p. 552.
Anemias of the Newborn. G. B. Wiswell.—p. 555.
Epidemic of Acute Laryngotracheobronchitis. F. W. Jeffrey.—p. 562.
Nasal Medication in Sinusitis. G. E. Tremble and F. Smith.—p. 564.
Three Problems of the Amputee. P. J. Burnham.—p. 569.
*Tietze's Syndrome A. K. Geddes.—p. 571.
Infective Hepatitis. C. H. A. Walton.—p. 573.
Diagnosis of Occupational Eczema. A. Marin.—p. 578.
Scope of Anesthesiology. S. Fleming.—p. 581.

Fenestration Operation.—Sullivan's experience with the fenestration operation was gained in the treatment of 410 cases. The degree of improvement in hearing which is obtained and maintained as a result of plastic reconstruction of the auditory mechanism in an otosclerotic ear is in direct proportion to the exactitude and perfection with which each step in this technic is carried out. Complete rehabilitation for social and economic contact as a result of restored hearing was accomplished in 246 of his 410 cases. Partial rehabilitation for social and economic contacts was accomplished in 17 cases. The hearing was not improved and remained at the preoperative audiometric decibel level in 21 cases. The hearing was depressed to a decibel level lower than the preoperative one in 15 cases. There were 19 cases in which the fistula had closed and the hearing reached its preoperative level. The loudness balance test gives more information than any of the others. In this test, a sound is fed every one and one-half seconds to one of a pair of matched earphones on the patient's ear. If the ears are not the same the sound is selectively adjusted on one of the ear phones until the loudness is equal; that is, the loudness is balanced. The difference between the two voltages measures the difference in the loudness sensitivity of the two ears. The balance is carried out in steps from threshold level up to the limit of the patient's tolerance, where discomfort or pain occurs. In clinical otosclerosis cessation of the progress of deafness can be obtained by the establishment of a permanent labyrinth fistula. To obtain a lasting improvement, a second condition is required: the adaptation to this fistula of a new tympanic system as amplifier of the aerial sound vibration. The duration of the functional benefit depends on the permanence of the anatomic modification.

Tietze's Syndrome.—The syndrome of nonsuppurative and nonspecific but painful swelling of rib cartilages was first described by Tietze in 1921. All of Geddes' 22 patients had a concomitant respiratory infection. In some the onset of the respiratory infection antedated the chest pain; in others it was coincident; in still others the respiratory symptoms followed in one or two days. In the cases of long duration there was a strong tendency to recurrence of tenderness with each fresh "cold." All the cases occurred in autumn and winter. The age incidence varied from 19 to 40 years. All were well nourished. Altogether 28 cartilages were involved in the 22 patients. The second left and the second right costal cartilages were most frequently involved, but apparently any of the costal cartilages can be involved. The course is variable and often prolonged. The disability produced is minor, not necessitating hospitalization, but may be very annoying and in most cases necessitates light duty for weeks. The cause is unknown. There is no reason to suspect dietary deficiency. The association with respiratory disease is invariable. Tuberculosis and syphilis were ruled out. When patients present themselves with thoracic pain the possibility of Tietze's syndrome should be borne in mind.

Cancer Research, Baltimore

5:673-768 (Dec.) 1945

Carcinogenesis with Azo Compounds: I. Action of Four Azo Dyes in Mixed and Pure Strain Mice. A. H. M. Kirby.—p. 673.
Id.: II. Action of Azo Compounds in Mice, and Bearing Thereof on Theories of Azo Dye Carcinogenesis. A. H. M. Kirby.—p. 683.
Deterrent Effect of Light on Incidence of Spontaneous Mammary Cancer in Mice. F. L. Apperly, M. K. Cary and A. J. Borowski.—p. 697.
*Relationship of Caloric Intake and Blood Sugar to Sarcogenesis in Mice. H. P. Rusch, R. O. Johnson and B. E. Kline.—p. 705.
Certain Effects of Dietary Pyridoxine and Casein Carcinogenicity of p-Dimethylaminoazobenzene. E. C. Miller, C. A. Baumann and H. P. Rusch.—p. 713.
Phosphorus Compounds in Animal Tissues: II. Nucleic Acid Content of Homologous Normal and Cancer Tissues. W. C. Schneider.—p. 717.
Attempts to Localize Tumor Metastases in Long Bones by Mechanical Trauma. O. Saphir, M. Appel and D. H. Levinthal.—p. 722.
Reticuloendothelial Immune Serum: III. Effect of Strong Concentrations on Growth of Walker Rat Sarcoma 319 in Vitro. C. M. Pomerat.—p. 724.

Caloric Intake and Blood Sugar in Sarcoma in Mice.—Eight groups of 40 strain C mice each were placed on diets that varied in their content of calories, protein and fat. Half of the groups were allowed a caloric intake of 9.3 calories per mouse daily, and the other half were restricted to 5.7 calories per mouse daily. The groups were further divided in such manner that the level of protein was either high or medium and the amount of fat either medium or low. After the mice had been stabilized on their diets for fifty days, each was injected subcutaneously with 200 micrograms of 3,4-benzpyrene in 0.2 cc. of corn oil. A comparison was made between caloric consumption, tumor formation and the level of blood sugar. The mice on nonrestricted diets were heavier, the blood sugar tended to be higher than in those whose caloric intake was restricted, and the development of sarcomas was facilitated in the mice that were relatively hyperglycemic. Although the evidence indicates that under certain conditions the development of neoplasms is favored in animals with a somewhat elevated blood sugar, this in itself was not necessary for tumor formation, as was shown in the case of mice receiving a high caloric diet in which considerable carbohydrate was replaced by protein and fat. In this case the incidence of sarcomas was high, although the blood sugar level was not much different from that of the restricted mice.

Delaware State Medical Journal, Wilmington

17:201-218 (Nov.) 1945

Procurement and Assignment. P. C. Barton.—p. 201.
Hyperinsulinism. C. Levy, L. Jones and W. P. Martin.—p. 205.
Surgical Treatment of Gastrojejunal Ulcer. P. Alava.—p. 209.
Cervicofacial Actinomycosis Successfully Treated with Penicillin and Repeated Aspirations. E. M. Bohan and G. S. Serino.—p. 213.

17:219-246 (Dec.) 1945

Tularemic Pneumonia: Case. J. Beebe.—p. 219.

Gastroenterology, Baltimore

5:155-240 (Sept.) 1945

Pruritus Ani: Clinical Study. A. L. Shapiro and S. Rothman.—p. 155.
Dibutoline: II. Effect on Insulin Induced Gastric Hypermotility in Human Subjects and Other Observations. Clare G. Peterson and D. R. Peterson.—p. 169.
Effect of Succinylsulfathiazole on Volume of Intestinal Gas in Normal Young Men. E. A. Rasberry Jr.—p. 175.
Pancreatic Lithiasis: Report of 2 Cases in Young Adults. H. F. Wechsler and J. I. Weimer.—p. 181.
Serial Tests of Hippuric Acid Formation in Hepatitis After Intravenous Sodium Benzoate. R. C. Page and P. W. Preisler.—p. 189.
Effects on Small Intestine of Rapid Intravenous Injections of Casein Hydrolysate. N. Learner, H. W. Robinson, E. M. Greisheimer and M. J. Oppenheimer.—p. 201.
*Study of Alleged Role of Caffeine in Pathogenesis of Gastric Ulcer. G. Giddings, W. Wynn and J. Haldi.—p. 210.

Caffeine in Pathogenesis of Gastric Ulcer.—Giddings and his co-workers found that administration of 75 mg. of caffeine per kilogram of body weight by stomach tube to 26 cats daily for twenty-one days did not produce erosions or ulcers in the stomach. Injection of the same amount of caffeine daily intramuscularly in a mixture of beeswax and oil for the same length of time likewise failed to produce erosions or ulcers. Ulcers were produced in cats by caffeine only when the dose was large enough to kill the animal. Thirty-four albino rats were given 75 mg. of caffeine per kilogram of body weight by stomach tube over a period of eight to twenty weeks. In only 3 animals were there any alterations in the stomach that might be regarded as erosions or ulcers. The structural changes in these instances were microscopic. These experimental data do not offer valid reason for the conclusion that caffeine-containing beverages such as coffee or tea play a part in the pathogenesis of gastric ulcer in man.

5:241-344 (Oct.) 1945

*Infectious Hepatitis, with Especial Reference to Its Occurrence in Wounded Men. A. M. Snell, D. A. Wood and L. J. Meienberg.—p. 241.
Small Intestine: Review of Recent Literature. E. D. Kiefer.—p. 259.
Chronic Ulcerative Colitis with Infantilism and Carcinoma of Colon. W. E. Ricketts, E. P. Benditt and W. L. Palmer.—p. 272.
Stoppage of Bodily Growth in Boy with Stenosing Enteritis: Case. W. C. Alvarez.—p. 281.
Observations on Anorexia. J. Meyer, Harriet Sorter and H. Necheles.—p. 283.
*Cardioesophageal Relaxation. M. Berk.—p. 290.
Gastric Acidity in Rheumatoid Arthritis. O. Lucchesi and M. Lucchesi.—p. 299.
Experimental Studies on Excretion of Neutral Red by Stomach. R. Kolm, S. A. Komarov and H. Shay.—p. 303.

Infectious Hepatitis in Wounded Men.—According to Snell and his associates infectious hepatitis has manifested itself as one of three clinical entities: epidemic jaundice, postvaccinal (yellow fever) hepatitis and homologous serum jaundice. Fatal cases of any of the three types have shown a common picture at necropsy, namely that of acute or subacute (yellow) atrophy of the liver. It appears probable that serum or blood containing the icterogenic agent might be responsible for certain clinical cases of hepatitis occurring in wounded men who had received these agents at the time of injury. The authors have seen 32 such cases, with recovery in 26; the six deaths occurred on an average of one week after jaundice was first noted. All patients had received blood or/and plasma at the time of injury and thereafter. Eight, including the 6 who died, developed symptoms of involvement of the central nervous system. The essential pathologic picture in the fatal cases was one of an acute autolytic process in the liver. The relatively high mortality in this series is believed to be due to nutritional factors secondary to the wounds which these men had received The prevention of fatalities in serum jaundice occurring in wounded men must begin with the maintenance of their general nutrition and the correction of protein and vitamin deficiencies. The use of dextrose intravenously becomes a necessity until vomiting and anorexia have subsided. The authors used amigen solution conjointly with the dextrose. Once the patient is able to take food, the standard high carbohydrate, high protein diet, low in fat, long employed in the treatment of hepatic disease, should be administered until functional hepatic tests indicative recovery.

Cardioesophageal Relaxation.—Berk says that cardioesophageal relaxation or incompetence of the cardiac sphincter is an abnormality in which contents from the stomach regurgitate freely into the esophagus. In the instance described the condition was diagnosed by roentgenoscopy and confirmed by esophagoscopy. The patient was a man aged 47. The cause of the condition is unknown. It is apparently not a clinical entity. The importance of cardioesophageal relaxation lies in its possible confusion with other conditions about the terminal esophagus, such as hiatus hernia, diverticulum, achalasia or cancer. It frequently gives rise to disturbing symptoms, chief of which are epigastric distress and lumpy sensation at the lower sternum. Regurgitation and the relationship of symptoms to position were prominent in the case reported. It is likely that cardioesophageal relaxation is frequently overlooked and that if the radiologist reviews his old plates he may see a globular mass of barium outlining the lower part of the esophagus and obscured somewhat by the shadow of the spine. Cardioesophageal relaxation can be diagnosed by fluoroscopy usually in the supine or Trendelenburg position, whereupon barium may be seen to flow passively into a dilated lower esophagus and gravitate back into the stomach when the upright position is assumed.

Illinois Medical Journal, Chicago

88:221-272 (Nov.) 1945

Plastic Procedures About the Eyes. I. Puntenney.—p. 238.
Indications and Contraindications to Gastroscopy. M. M. Kirschen.—p. 243.
Orbital Proptosis. E. A. Thacker.—p. 246.
Emotional Control a Factor in Preserving Integrity of Heart. E. Keating.—p. 252.
Rorschach Test in Postencephalitis. J. L. Endacott.—p. 256.
Hemorrhagic Encephalopathy Following Five Day Treatment of Early Syphilis with Massive Doses of Mapharsen: Report of Case with Recovery. G. Heilbrunn and N. Hoffenberg.—p. 258.
Illinois Hospital Survey. R. R. Cross.—p. 263.

Industrial Medicine, Chicago

14:825-948 (Nov.) 1945. Partial Index

Relation of Hypersensitiveness to Poison Ivy and to Pure Ingredients in Cashew Nut Shell Liquid and Related Substances: Quantitative Study Based on Patch Tests. H. Keil, D. Wasserman and C. R. Dawson.—p. 825.
Physical Medicine in Industrial Injuries. S. L. Osborne.—p. 830.
The Consultant in Relation to Plant Physician. C. Leggo.—p. 834.
*Thymol Barbitone Test in Clinical Practice. C. P. McCord, L. L. Kline and P. E. Williams.—p. 835.
Illness in Industry. C. F. Long.—p. 840.
Army Industrial Medical Program at Port of Embarkation. J. S. Felton.—p. 854.
Health Aspects of Aluminum Ponton Work. F. E. Rieke.—p. 896.

The Thymol Barbital Test.—Ancillary to an investigation of the thymol barbital test in experimental carbon tetrachloride intoxication, McCord and his associates examined the serum or spinal fluid of 712 hospital patients. In 168 specimens of a somewhat selected group, 20 reactors (12 per cent) were detected. There were 49 reactors, or 6.8 per cent, among the total of 712 patients. Liver damage was indicated in the greater number of reactors, but the validity of the test was lower than appraised by Maclagan. The observations made by the authors do not agree with the concept that this test constitutes a measure of the gamma globulin present. Gamma globulin in pure form does not provide positive results, while the phospholipins, apart from gamma globulin, consistently led to heavy reactions. In certain instances, in the presence of weakly positive determinations the addition of traces of gamma globulin (itself negative) enhances the degree of positivity. It appears possible that gamma globulin may enter or may influence the precipitation phenomenon without constituting the chief precipitate. Reactors were not detected among 30 presumably healthy workers. Among 52 chemical workers 4 reactors were encountered. The latter control group is not representative of industrial workers in general. Positive results at and above 4 thymol units suggest pathologic change with implications of the liver. The thymol barbital test is not a measure of liver function; instead it denotes disturbed liver metabolism.

Journal of Aviation Medicine, St. Paul

16:285-362 (Oct.) 1945

Study of Aero Medical Problems in Liberator Bomber at High Altitude. J. H. Lawrence, C. R. Tobias, W. R. Lyons, H. F. Helmholz Jr. and A. R. Sweeney Jr.—p. 286.
Relationship of Anoxia Susceptibility to Diet. D. M. Green, J. S. Butts and H. F. Mulholland.—p. 311
Effect of Diet on Altitude Tolerance. M. Eckman, Beatrice Barach, C. A. Fox, C. C. Rumsey Jr. and A. L. Barach.—p. 328.
Flying Safety in AAF. R. H. Follis Jr.—p. 341.
*Report of Death of Passenger Under Treatment by Pneumothorax. K. E. Dowd.—p. 346.
Effectiveness of Preflight Oxygen Breathing in Preventing Decompression Sickness. F. M. Henry and S. F. Cook.—p. 350.
History of Progressive Changes in Equipment Used by Medical Department. G. E. Ledfors.—p. 356.
Improvement in Technic of Proetz Method of Treating Paranasal Sinusitis. M. J. Hoilien.—p. 358.

Death of Aircraft Passenger Under Treatment with Pneumothorax.—Dowd reports that an airline passenger, a man aged 21 who had pulmonary tuberculosis and an artificial pneumothorax, wore an oxygen mask which functioned normally. The mask was applied at 7,000 feet altitude. In another ten minutes the altitude of 16,000 feet was reached. Two minutes later, and without prior evidence of illness, the passenger became unconscious. In spite of all efforts at treatment he remained unconscious up to his death twenty-eight hours later. Death most probably resulted from air embolism. The convulsions, vomiting and unconsciousness all point to some residual cerebral damage which one would expect from a focal cerebral lesion such as could occur in air embolism. There is also a possibility that the cerebral nervous system disturbance was due to prolonged cerebral anoxia which, because of mediastinal shift or mediastinal emphysema or both, brought about by increased pneumothorax induced by altitude, caused impairment of cerebral circulation with sufficient cerebral anoxia to cause an irreversible reaction and death. Patients with pneumothorax should not travel by air, or, if they must, the height at which they travel should be restricted to altitudes of 5,000 feet.

Journal of Bacteriology, Baltimore

50:373-490 (Oct.) 1945. Partial Index

Nutritional Requirements of Lactic Acid Bacteria and Their Application to Biochemical Research. E. E. Snell.—p. 373.
Pyrogenicity of Bacterial Contaminants Found in Biologic Products. T. F. Probey and Margaret Pittman.—p. 397.
Studies on Death of Bacteria at Low Temperatures: I. Influence of Intensity of Freezing Temperature, Repeated Fluctuations of Temperature and Period of Exposure to Freezing Temperatures on Mortality of Escherichia Coli. R. S. Weiser and C. M. Osterud.—p. 413.
Morphology and Nature of Pleuropneumonia Group of Organisms. L. Dienes.—p. 441.
Paper Disk-Agar Plate Method for Assay of Antibiotic Substances. E. J. de Beer and M. B. Sherwood.—p. 459.
Influence of Changes in Concentration and Temperature on Bactericidal Activity of Formaldehyde in Aqueous Solutions. F. W. Tilley.—p. 469.
Fermentation of Glucose by Certain Gram-Positive, Non-Spore Forming, Anaerobic Bacteria. C. S. Pederson.—p. 475.
Correlation Between Antibacterial Power and Chemical Structure of Higher Alkyl Ammonium Ions. E. I. Valko and A. S. DuBois.—p. 481.

Journal of International College of Surgeons, Chicago

8:404-501 (Sept-Oct) 1945

Ten Years' Experience with Surgical Treatment of Pulmonary Tuberculosis G Lundh—p 404
Solid Tumors of Ovary. E. C Hessert and J. Bianco—p 413.
New Operative Technic for Cysts of Lung and for Chronic Spontaneous Pneumothorax R Nissen—p 421.
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Local Infiltration of Procaine Hydrochloride Solution Combined with Intravenous Administration of Pentothal Sodium H Bailey.—p 427.
Supravaginal and Complete Hysterectomies: Analysis of Indications, Results and Dangers R W. Mohler and E H Bishop—p 431
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Method of Inguinal Herniorrhaphy. R Lich Jr and R. B Samson.—p 454
Management of Swallowed Sharp Foreign Bodies: Report of Perforations of Appendix by Common Pin and of Cecum by Toothpick. M Weintrob and E Granet—p 459
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Who Introduced Cotton into Surgery? J. Alcantara—p 496

Journal of Nervous and Mental Disease, New York

102:433-536 (Nov.) 1945

*Electromyographic Studies in Poliomyelitis. P M Kohn, E M Zuckér and J A Toomey.—p 433
Psychiatric Cross Section Perspective Viewed Through Juvenile Court Cases S I. Stem—p 440
Character and the Psychopath P. W. Thomas—p 449
Science and Awareness. A N. Foxe—p 454
Central Nervous System in Acute Disseminate Lupus Erythematosus D Daly—p. 461.
Studies Regarding Glutamine and Ammonia in Cerebrospinal Fluid of Patients with Nervous and Mental Diseases, with Some Observations on Insulin Hypoglycemic Shock and Oligophrenia Phenylpyruvica M M Harris, with technical assistance of Roslyn T Roth and Ruth S Harris—p 466
Foster Homes for Adults Note on Practitioner s Improvisation W Muncie—p 477.
*Fatality Incident to Electroshock Treatment. Review of Subject and Autopsy Report A Gralnick—p. 483
Electroconvulsive Therapy in Prone Position. F Feldman, S. Susselman and S E Barrera—p 496
Electroconvulsive Therapy of Acute Hysteria. F Feldman, S Susselman, B Lipetz and S E Barrera—p 498.
Asthma and Solitude: Study of Asthmatic Incarcerate P. L. Goitein and E A Brown—p 501

Electromyographic Studies in Poliomyelitis.—Kohn and his associates did electromyographic studies on 13 patients ranging in age from 7 to 33 years. The patients were tested from seven to eighty days following their admission to the hospital. It was found that most muscles paralyzed in poliomyelitis do not show electromyographic evidence of spasm while at rest and that spasm is not an ever present symptom in paralyzed muscles. In this series only 20 per cent of the involved muscles tested showed continuous and sustained potential changes even when passively stretched In cases showing inconstant discharges when stretched it was noted that the potentials appeared only with the initial stretching and disappeared even though the muscle was kept on tension. This led the authors to suspect that some of these potentials may have been due to a protective splinting of the muscle in response to the pain produced by the needle electrodes themselves. Such a possibility was tested by applying both surface electrodes and needle electrodes to the same muscle and stretching the muscle Potentials were picked up from this muscle by both types of electrodes. However, when the needle electrodes were removed and the muscle again stretched, potential changes were not detected. One of the most interesting findings was the evidence of disordered reciprocal innervation This phenomenon is understandable in view of the fact that pathologic changes in poliomyelitis are found not only in the anterior horn cells but in the posterior horn cells and posterior root ganglions as well. Since intercalated (internuncial) neurons are found in the posterior horns, these cell bodies are also involved in the disease process Disturbances in their function should be expected and clinically manifested by disordered reciprocal and cross innervation reactions. The simultaneous activation of agonist and antagonist corroborates a similar finding by Watkins and his associates. The additional finding of simultaneous activation of corresponding antagonist and agonist muscles of the opposite side tends further to support the concept of disorganization of the neuromuscular mechanism in poliomyelitis as one of the features of this disease.

Fatality in Electroshock Treatment.—Gralnick reports what appears to be the thirteenth fatality from electroshock treatment in the American literature, and the seventh with a necropsy report. The cellular changes found were mainly the result of the presence of a tumor. What part of these changes resulted from the electroshock itself cannot be answered The case illustrates that when the brain is in a state of delicate balance it requires little electrotherapy to destroy it completely. While usually the changes produced seem to be physiologic and reversible, they may, in the presence of preexisting structural damage, eventuate in further permanent alterations When antecedent damage is not known to have been present, any resulting structural pathologic condition may be due to individual susceptibility. The evidence for such a supposition in human beings is not complete.

Journal of Pharmacology & Exp. Therap., Baltimore

85:1-102 (Sept.) 1945

Calculation of Biologic Assay Results by Graphic Methods All or None Type of Response E J de Beer—p 1.
Antithyroid Studies: II. Goitrogenic Activity of Some Imidazoles and Benzimidazoles W. G Bywater, D. A McGinty and N. D Jenesel.—p 14
Experimental Basis for Quantitative Chemotherapy of B Novyi in Mice, with Comparison of Action of Penicillin and Dichlorphenarsine Hydrochloride A P Richardson, H A Walker, P. Loeb and I Miller.—p 23.
*Distribution and Fate of Penicillin in Body W. C. Cutting, F. P. Luduena, M Fiese, H W Elliott and J. Field II.—p. 36
Effect of Various Electrolytes on Toxicity of Desoxycorticosterone Acetate H Selye, J. Mintzberg and E M Rowley—p 42.
Blocking Action of Cinchona Alkaloids and Certain Related Compounds on Cardioinhibitory Vagus Endings of Dog. E Hiatt, D Brown, Gertrude Quinn and K MacDuffie—p 55
Isopropyl Alcohol Acquired Tolerance in Dogs, Rate of Disappearance From Blood Stream in Various Species and Effects on Successive Generation of Rats A. J. Lehman, H. Schwerma and Eleanor Rickards—p 61
Further Observations on Pressor Action of Optical Isomers of Sympathomimetic Amines E E Swanson, F. A Steldt and K. K. Chen.—p 70
Hydrolysis of Demerol by Liver in Vitro F. Bernheim and Mary L C Bernheim—p 74
Biologic Comparison of Local Anesthetics. Edith Bulbring and Isabella Wajda—p 78
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Central Stimulant Action of Some Vasopressor Amines. M R. Warren and H W. Werner—p 119.
Observations on Nature of Antagonism of Histamine by Beta Dimethylaminoethyl Benzhydryl Ether (Benadryl) J. A Wells, H C. Morris, H B Bull and C A Dragstedt—p 122
Antithyroid Studies: III. Goitrogenic Activity of Certain Chemotherapeutically Active Sulfones and Related Compounds. D. A. McGinty and W G Bywater—p 129
Studies on Mechanism of Action of Sympathomimetic Amines W. M. Govier, Vera Bermann and K. H Beyer.—p 140
Studies on Shock Induced by Hemorrhage. Margaret E. Greig and W E De Turk—p 150
Effect of Digitalis on Coagulation Time of Blood Helen Ramsey, N. W. Pinschmidt and H. B Haag—p 159
Studies on Antimalarial Drugs. Metabolism of Quinine and Quinidine in Birds and Mammals F E Kelsey, F. K Oldham and E. M K Geiling—p 170.
Effect of Ether, Divinyl Ether and Cyclopropane Anesthesia on Heart Rate and Rhythm and Blood Pressure During Normal Respiratory Activity and During Artificial Respiration After Respiratory Arrest. B H Robbins—p 192
Studies on Cyclopropane: IX Effect of Premedication with Demerol on Heart Rate, Rhythm and Blood Pressure in Dogs Under Cyclopropane Anesthesia. B H Robbins—p 198
Degradation of Quinine in Duck, Chicken and Dog E H. Dearborn and E. K. Marshall Jr—p 202.

Distribution and Fate of Penicillin in Body.—Cutting and his associates compared the concentration of penicillin in the blood and in various tissues in rats and rabbits one half hour after the subcutaneous and intravenous injection of 1,000 to 10,000 units of penicillin. In both rats and rabbits the brain contained only a negligible amount of penicillin, and the liver, heart and striated muscle contained amounts approaching that in the blood. The penicillin content of the kidney is more variable than that of other organs. In the case of the rabbit the variability is less than in the rat, and the content, apparently, is significantly higher. Rabbit kidney contained almost fifty times the amount in the blood, while in only 1 instance was a concentration of this order found in rat kidney. Since penicillin is rapidly excreted in the bile, comparisons of blood and biliary concentrations were made after the intravenous injection of penicillin in dogs. Simultaneous measurements were made in saliva collected after cannulation of the submaxillary duct and augmented by electrical stimulation of the chorda tympani or the sympathetic nerve supply and injection of pilocarpine. It appears that the amount of penicillin which is lost in the saliva is negligible, while that in the bile may be somewhat greater. However, the amount lost in the bile would also appear to be without clinical importance. Biliary obstruction in rabbits did not influence the rate of disappearance of penicillin from the blood, but renal obstruction greatly prolonged its effect. Penicillin is not rapidly destroyed in shed blood at body temperature and even less rapidly in urine or isotonic solution of sodium chloride. Accordingly, the major portion of any administered penicillin is lost in the urine, with a minor part in bile and saliva, and the fate of the portion unaccounted for remains unknown.

85:207-287 (Nov.) 1945

*Chronic Toxicity of Quinacrine (Atabrine). O. G. Fitzhugh, A. A. Nelson and H. O. Carvery.—p. 207.
Antidiuretic Action of Barbiturates (Phenobarbital, Amytal, Pentobarbital) and Mechanism Involved in Action. R. C. de Bodo and K. F. Prescott.—p. 223.
Absorption of Thiourea from Ointments Applied to Wounds. J. W. Williamson Jr., M. R. Warren and H. W. Werner.—p. 234.
Antibiotic Substances Active Against M. Tuberculosis. M. T. Bush, H. L. Dickison, Charlotte B. Ward and R. C. Avery.—p. 237.
*Sulfonamides for Bacillary Dysentery: Antibacterial Activity of Sulfacarboxythiazoles and Sulfathiadiazole. H. J. White, P. H. Bell, J. F. Bone, J. C. Dempsey and M. E. Lee.—p. 247.
Inhibitory Effect of Atabrine and Acridine Derivatives on Acid Fast Bacilli in Vitro. R. C. Avery and Charlotte B. Ward.—p. 258.
Spirocheticidal and Trypanocidal Action of Acid-Substituted Phenyl Arsenoxides as Function of p_H and Dissociation Constants. H. Eagle.—p. 265.
Sympathomimetic Vasodilating Action of Aliphatic Amines. R. P. Ahlquist.—p. 283.

Chronic Toxicity of Quinacrine.—Fitzhugh and his associates studied the lifetime effects of quinacrine on laboratory animals. Studies were made on a total of 180 albino rats. Five groups were placed on a high protein diet and five groups on a low protein diet. One group on each diet was given 100 parts per million of quinacrine, a second group 200, a third 400 and a fourth 800; a fifth, which was used as control, received the diet without the added quinacrine. At the 100 parts per million level the toxic effects of quinacrine were slight. At higher levels they became progressively more severe. At a level of 800 parts per million the rats showed most of the following changes: generalized yellow discoloration; high grade necrosis of the liver; regenerative changes in the remaining viable liver; upper abdominal adhesions; focal necrosis and/or fibrosis of the myocardium and voluntary muscles; basophilic granules in hepatic, renal and other cells; foamy macrophages in several locations; slight hyperplasia of the splenic pulp and bone marrow, and a low grade pulmonary consolidation. At a dosage level of 800 parts per million a high level of protein in the diet considerably delayed and reduced the severity of liver damage as compared to that seen with a low level of protein; at 400 parts per million this delay and reduction was only slight, and at lower levels it was not apparent. At 400 parts per million and lower levels of quinacrine, myocardial fibrosis and other cardiac changes became a factor equal to or greater than liver damage in causing the death of the animal. After eighteen to twenty-four months of feeding, rats on 200 parts per million of quinacrine in either a low or high protein diet frequently showed anatomic lesions as a result of the medication. Even at 100 parts per million there was a small amount of damage. The percentage of rats in which quinacrine caused cirrhosis of the liver was so small that quinacrine cannot be classed as a distinctly cirrhogenic agent. In relation to the body weight of the rat the lowest dosage of quinacrine which produced slight toxic effects in some animals corresponds to approximately 4 mg. per kilogram a day for two years. The authors found that the amount of quinacrine that will produce toxic effects in rats is above the therapeutic or prophylactic dose for man.

Sulfonamides for Bacillary Dysentery.—White and his associates found that sulfacarboxythiazole (2-sulfanilamido-5-carboxythiazole) was about as active as sulfaguanidine against twelve dysentery strains in vitro and against coliform bacteria in mice. With respect to solubility, absorption and mode of action, sulfacarboxythiazole appeared to be similar to sulfathalidine (N^4-phthalylsulfathiazole). Sulfamethylcarboxythiazole (2-sulfanilamido-4-methyl-5-carboxythiazole) decarboxylates quite readily to sulfamethylthiazole. Consequently, further investigation of this compound as a possible chemotherapeutic agent does not appear to be warranted. 2-Sulfanilamido-4-carboxythiazole does not decarboxylate readily but is relatively inactive. Sulfathiadiazole (2-sulfanilamido-1, 3, 4-thiadiazole), when compared with sulfaguanidine, was found to be about ten times as soluble at p_H 6.5, from four to eight times as active against dysentery strains in vitro and more active against coliform bacteria in mice. These properties, together with preliminary data on its absorption in mice, indicated that sulfathiadiazole is at present one of the most promising compounds available for trial in the treatment and prophylaxis of bacillary dysentery.

Journal of Urology, Baltimore

54:409-500 (Nov.) 1945

Bilateral Carcinoma of Adrenal Cortex as Cause of Severe Backache, with Report of Case. J. Zaslow and M. Bernstein.—p. 409.
Pyelocystostomy in Solitary Ectopic Kidney. B. W. Wright.—p. 413.
Renal Typhoid Fever: Presentation of Case of Primary Type. D. J. Abramson.—p. 422.
Ureterocutaneous Anastomosis: Technic to Eliminate Permanent Ureteral Catheters. N. J. Heckel.—p. 430.
Primary Carcinoma of Ureter. C. F. Bowie and E. Bors.—p. 434.
Elasticity of Human Urinary Bladder. J. Krafka Jr.—p. 438.
*Osteitis Pubis Following Prostatectomy. M. Muschat.—p. 447.
Torsion of Appendix Testis (Hydatid of Morgagni): Report of 2 Cases, with Study of Microscopic Anatomy. C. W. Vermeulen and C. S. Hagerty.—p. 459.
Observations on Urolithiasis Among American Troops in Desert Area. L. W. Pierce and B. Bloom.—p. 466.
Use of Wire in Repair of Hypospadias. C. D. Goodhope.—p. 471.
Characteristics and Variations in Semen Specimens in 100 Normal Young Men. J. MacLeod and Louise M. Heim.—p. 474.
Trichomonas in Male. R. E. Strain.—p. 483.
Octin as Spasmolytic in Urologic Practice. J. C. Pennington.—p. 486.
Improved Young Urologic X-Ray Table. H. H. Young.—p. 489.

Osteitis Pubis Following Prostatectomy.—Muschat says that osteitis pubis occurs in a small number of patients after operations on the urinary bladder, especially after prostatectomy. It is an inflammatory process of the bone beginning in the symphysis pubis and gradually involving the pubic rami extending to one or both ischia. This inflammatory process spreads via the periosteum to the variously attached muscles of the pelvis, especially the obturator. The etiology of this condition is obscure. The patient goes through a period of physical agony lasting from three to twelve months. The disease begins about ten days after operation but may not begin until two months later. The pain usually starts over the symphysis, gradually shifting to the right or left of the suprapubic area. Next the pain travels to the crotch, to the triangle of Scarpa and to the inner side of the thighs. Later in the disease there may be pain in the perineum and over the tuberosities of the ischia. The patient experiences excruciating pain in the inner side of the thighs in the form of spasmodic contractions of the adductor muscles. About the third week the x-ray begins to reveal some changes in the symphysis pubis, namely fraying of the periosteum with a moth eaten appearance of the symphysis and the ramus pubis on either side. As time progresses, more bone involvement is seen. Decalcification involves the rami and the inner portions of the ischia until the tuberosities are reached. Necropsies and complete study of the pathology of the bone structures have not been made. Most therapeutic agents that have been tried have been useless. In the author's opinion the disease is self limited and does not require surgical intervention. If an abscess does develop it should be properly drained. The author used penicillin 4,000,000 units in 1 case without any subjective improvement, but it may have caused the absorption of the inflammatory lumps near the ischia. Sulfonamides were tried without influencing the condition. Any manipulative procedure to hasten the recovery is strongly contraindicated. It only aggravates the condition and stirs up local trauma, thus spreading the disease process and delaying the recovery.

Maine Medical Association Journal, Portland

36:183-198 (Nov.) 1945

Nerve Compression Syndrome of Lumbar Nerves, Modern Concepts and Surgical Treatment. A. S. Crawford.—p. 183.
Medical Care—Airborne. L. M. Schmidt.—p. 188.

36:199-216 (Dec.) 1945

Accessible Malignancies of Head. T. C. McCoy.—p. 199.
Paroxysmal Ventricular Tachycardia: Report of Case. M. Bacon.—p. 202.

Medical Annals of District of Columbia, Washington

14:531-582 (Dec.) 1945

*"Typical" Headache of Essential Hypertension: Etiologic Considerations and Report of New Form of Therapy. S. A. Steiner.—p. 531.
Surgical Treatment of Varicose Veins (Retrograde Catheter Method). E. de Savitsch.—p. 539.
Transverse Incision for Gallbladder Surgery. O. C. Cox and H. J. Forrest.—p. 542.
Causalgic State: Early and Fixed Lesions. F. D. Threadgill.—p. 544.

New Therapy in Headache of Essential Hypertension.—On the premise that recumbency seems to favor production of the cephalalgia, Steiner instructed patients to elevate the headposts of their bed on 10 inch high blocks. Of 12 patients in whom elevation of the head of the bed during sleep was employed, 10 obtained dramatic relief of their complaint. Four patients required oral ergotamine therapy and obtained complete relief after a week's course of medication. In only 1 case was there partial failure. This patient was unable to sleep with more than 5 inch elevation of the head of her bed. Nicotinic acid was prescribed in several cases on the hypothesis that this headache, like migraine, is of a primary vasoconstrictor type. It was without value. Phenobarbital and thiocyanates were used prior to institution of the present therapy. They also were ineffective.

Michigan State Medical Society Journal, Lansing

44:1273-1414 (Dec.) 1945

Continuous Caudal Analgesia. R. V. August.—p. 1341.
*Experiences with Fibrin Fixation Methods of Skin Grafting: Clinical Evaluation. W. G. McEvitt.—p. 1347.
*Scurvy. M. F. Osterlin.—p. 1351.
Use of Serous Fluids as Aid in Diagnosis. D. H. Kaump and W. P. Chester.—p. 1353.
Intramuscular Foreign Protein in Treatment of Nonspecific Adenitis. H. G. Clark and M. S. Cioffari.—p. 1358.

Fibrin Fixation Methods of Skin Grafting.—Fibrin fixation methods of skin grafting by the technics of Tiderick and Warner and of Sano were tested by McEvitt in a number of typical situations such as grafting of a raw area over the anterior surface of the chest resulting from radical mastectomy, grafting for burns involving the left axilla and the lateral chest wall in a boy 5 years old, grafting of the forehead, of the eyelids, of the cheek and buccal margins and of the dorsum of the hand for third degree burns and grafting for third degree burns on the left lower extremity from the groin to the ankle. Both technics produced fixation of all types of grafts on both raw and granulating surfaces in a matter of seconds. The grafts remained healthy and viable. "Thrombin topical," a sterile powder prepared from beef plasma and used in Tiderick and Warner's technic, has the advantage of being produced commercially in quantity and delivered by the manufacturer ready for use. The elimination of pressure dressings promotes comfort and earlier movement of the part. Tissue maceration does not occur, and the bedside care of children is simplified. In certain areas of strain such as the interdigital webs and about the mouth, fibrin fixation without pressure dressing involves the risk of graft separation and slough. In such danger areas the combination of fibrin fixation and pressure should improve results. While the elimination of suturing does avoid troublesome bleeding, the advantage is more than counterbalanced by the difficulties inherent in graft shrinkage. In situations where grafting must be done in the presence of infection, fibrin fixation would seem to be the method of choice. It is a definite aid in adhering flap linings. Fibrin fixation methods properly applied are a valuable addition to the armamentarium of the plastic surgeon.

Scurvy.—From 1937 through 1944 Osterlin observed 68 cases of scurvy, 24 of these at the Central Michigan Children's Clinic during 1943 and 1944. More cases have been seen during the past two years than during any of the preceding years. The disease occurred predominantly (58 cases) during the latter half of the first year of life, when the baby is likely to be on a milk formula without getting sufficient vitamin C from supplementary foods. Irritability, pain on motion, poor appetite, vomiting, diarrhea and sore mouth were the most common symptoms found in this group. Scorbutic rosary, tenderness, particularly in the lower extremities, malnutrition, swollen and bleeding gums, pallor and petechia or purpura were the most common physical findings. Studies showed some or all the typical x-ray findings of vitamin C deficiency. Some form of vitamin C should be given every infant beginning with the first month, particularly those fed on an artificial formula. There are many infants who refuse to take or who vomit orange juice when attempts are made to give it. Fifty mg. of ascorbic acid can easily be given daily. An educational program on the part of physicians and public health workers is essential for the control of scurvy.

Military Surgeon, Washington, D. C.

97:441-542 (Dec.) 1945

Tuberculosis in German Prison Camps. E. R. Long.—p. 449.
Reconditioning Neuropsychiatric Patients in the Army. H. A. Cotton Jr.—p. 450.
Chronic Meningococcemia: Case and Discussion. J. K. Norman.—p. 455.
*Procaine Infiltration in Treatment of Acute Sprains. C. W. McLaughlin Jr.—p. 457.
Case Report of Dissecting Aneurysm of Femoral Artery of Undetermined Etiology and Unusual Symptomatology. R. C. Giles.—p. 460.
*Study of Camptocormia, with Presentation of 3 Postspinal Cases. E. E. Weiss.—p. 462.
Toothaches at Low Atmospheric Pressure. H. C. Sandler.—p. 475.
Meningococcemia, with 4 Case Reports. A. Weisberg.—p. 478.
Aneurysm of Palmar Arteries: Report of Case. R. M. Bradley.—p. 486.
Procaine Toxicity, with Report of Near Fatal Case. G. F. Hewson.—p. 489.
Venereal Disease Control Survey in a Battalion. A. A. Maislen.—p. 493.
Value of Music in Resocialization and Rehabilitation of the Mentally Ill. W. Simon.—p. 498.
Application of Xanthydrol-Koh-Pyridine Method to Determination of 2,2,Bis(P-Chlorophenyl) 1,1,1 Trichlorethane (DDT) in Water. J. C. Castillo and H. A. Stiff Jr.—p. 500.
Improvised Fracture Table. K. M. Lippert.—p. 503.
Extragenital Transmission of Syphilis: Case Report. J. D. Maxwell.—p. 505.
Ring Injuries. H. E. Simon and H. Alban.—p. 506.
New Surgeon's Metal Locator. W. E. Gilson and T. C. Erickson.—p. 508.

Procaine Infiltration in Acute Sprains.—Through a skin wheal using a long intramuscular needle all tender areas about the ankle joint are thoroughly infiltrated with 20 cc. of a 1 per cent procaine solution without epinephrine at each site. It has not been necessary to introduce the procaine into any hematoma which may be present, a general diffusion of the involved area being entirely satisfactory. On completion of the injections the ankle is gently massaged, and manipulation of the joint is undertaken. The foot is carried into all positions, and if discomfort persists the injection is repeated. With satisfactory injection there is immediate relief of pain. Excellent results were observed following primary procaine infiltration in nine tenths of the 51 cases seen within twenty-four hours after the injury occurred. The principal factors which may prevent this method from being successful are delayed injection, inadequate injection and extensive ligamentous damage.

Camptocormia.—Weiss reports 3 instances of camptocormia after spinal puncture in prisoners in a disciplinary center. Camptocormia is a symbol. When it develops in combat or combat training it is explained by "Duck when you're in danger." Suggestion on the part of the physician is a potent etiologic factor in camptocormia. The disability may be brought about unintentionally by the concern and ministrations of the doctor who seeks and treats an organ reaction without recognizing the emotional-functional basis of the condition Prolonged examination is neither necessary nor desirable lest excessive concern and ministration lead the patient to believe his condition serious Like other forms of hysteria, camptocormia can be made to disappear in the same way it develops —through suggestion The author puts special emphasis on intravenous barbiturate narcopsychotherapy

New England Journal of Medicine, Boston

233:673 710 (Dec 6) 1945

*Role of Sympathectomy in Treatment of Immersion Foot and Frostbite J L Southworth —p 673
*Penicillin in Treatment of Tetanus Report of 2 Cases L Weinstein and C Wesselhoeft —p 681
Diabetic Neuropathy A Rudy —p 684
Pneumococcal Pericarditis Treated with Intrapericardial Penicillin Report of Case C M Grossman —p 689
Hemoglobinemia and Hemoglobinuria J I Ross —p 691
Oat Cell Carcinoma of Lung Portal Cirrhosis of Liver —p 697
Embolism of Middle Cerebral Artery Cerebral Infarction —p 701

Sympathectomy in Immersion Foot and Frostbite—Many first degree cases heal without residual disability in about six weeks Approximately 25 per cent of such patients have bothersome complaints of a neuritic or vasospastic nature Many of the second degree injuries heal as do the first degree type as far as the acute manifestations are concerned Approximately 75 per cent of these patients have complaints of a neuritic or vasospastic nature In third degree lesions amputations are obligatory and neurologic and vasospastic complications are absent The late manifestations of immersion foot or frostbite fall into three groups disturbances of cutaneous sensation, inadequate circulation and pain on use In first and second degree cases the changes may not become static until eighteen months after injury Southworth does not employ sympathetic block or ganglionectomy in acute stages of immersion foot For the treatment of certain sequelae of frostbite or immersion foot, however, sympathetic nerve block or ganglionectomy appears to be indicated The disturbances of cutaneous sensitivity are almost invariably removed by sympathectomy In some patients a temporary sympathetic block not involving the somatic nerves immediately restores cutaneous sensitivity and relieves hyperesthesia In others there is a return to normal within two or three days after ganglion block by alcohol injection or ganglionectomy, but it should be noted that these symptoms do not usually contribute much to permanent disability If persistent and annoying symptoms of circulatory insufficiency resembling vasospasm are present, sympathectomy is helpful If excessive sweating, Raynaud's phenomenon or intermittent claudication is prominent in the clinical picture, sympathectomy results in great improvement Since these symptoms tend to regress spontaneously, the decision to perform sympathectomy may be safely postponed If thinning of the skin appears within the first three months, sympathectomy should be performed Otherwise alcohol block may be used for symptomatic relief Deep seated pain, which is often the principal disabling symptom, does not respond to sympathectomy Sympathetic denervation produces beneficial effects on certain late symptoms but does not always prevent partial disability

Penicillin in Tetanus.—Weinstein and Wesselhoeft report 2 cases of tetanus in which recovery followed treatment with large amounts of antitoxin, surgical excision of the wounds and administration of large doses of penicillin Clostridium tetani could no longer be isolated from the wounds twenty-four hours after the first administration of penicillin The already demonstrated antibiotic influence of penicillin on this organism in vitro appears to be confirmed in vivo The use of penicillin in tetanus appears to be most valuable in cases in which multiple lesions not all of which can be removed by surgical means are present or in which no focus of infection is detectable This antibiotic agent is not intended to replace the administration of antitoxin, excision of wounds, adequate sedation and maintenance of a normal state of nutrition and hydration but appears to be a highly important adjuvant to these other therapeutic measures

New York State Journal of Medicine, New York

45:2591-2716 (Dec. 15) 1945

Extraperitoneal Cesarean Section, with Special Reference to Water Technic R J Pieri and F R Irving —p 2645
Clinical Study of Fifteen Cases of Sinusitis E. C McCulloch —p 2656

46:1-112 (Jan 1) 1946

Treatment of Blood Dyscrasias S L Vaughan —p 55
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North Carolina Medical Journal, Winston-Salem

6:469-504 (Nov) 1945

Medicine and the Public Health in the Postwar World T Parran —p 469
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Female Venereal Prophylaxis and Feminine Hygiene New Applicator Using Soap with Sulfathiazole, Results in Cases of Vaginitis W L Gould —p 518

Oklahoma State Medical Assn. Jour., Oklahoma City

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Pennsylvania Medical Journal, Harrisburg

49:113-224 (Nov) 1945

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Proc. of Staff Meet. of Mayo Clinic, Rochester, Minn.

20:449-472 (Nov 28) 1945

*Clinical Use of Streptomycin Study of 45 Cases W E Herrel and D R Nichols —p 449
Protection in Roentgenoscopy J I Bacon and E T Leddy —p 463
Parenteral Administration of Gelatin T H Seldon J S Lundy, R C Adams and E N Cook —p 468
Transurethral Surgery in 1944 J L Emmet, E N Cook, T L Pool and L F Greene —p 469

Clinical Use of Streptomycin—Herrel and Nichols did not encounter serious irreversible toxic effects from the use of streptomycin in 45 cases presenting a variety of infections There were 8 cases of bacteremia, in 6 of which recovery occurred Doubtful results were obtained in 2 cases of undulant fever associated with bacteremia Good results were obtained in 10 of 13 cases of moderately severe and severe infections of the urinary tract due to a variety of pathogenic organisms Satisfactory results were obtained in 4 of 5 cases of infection involving the tracheobronchial tree The effect of streptomycin in 4 cases of syphilis was doubtful

Rhode Island Medical Journal, Providence

28:875-944 (Dec.) 1945

Diagnosis and Primary Surgical Treatment of Injuries of Hand. W. E. Browne.—p. 875.
Hormones in Tuberculosis. P. F. Harrington.—p. 880.
Penicillin Treatment of Early Syphilis. D. W. J. Bell.—p. 884.
Rhode Island Second Injury Fund. E. I. Friedman.—p. 893.
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South Carolina Medical Assn. Journal, Florence

41:309-334 (Dec.) 1945

Hazards of Bed Rest. W. R. Mead.—p. 309.
Unilateral Agenesis of Kidney with Double Kidney and Ureterocele on Opposite Side and Genital Anomalies. M. Nachman.—p. 312.

Southern Medical Journal, Birmingham, Ala.

38:773-856 (Dec.) 1945. Partial Index

Pneumococcal Meningitis: Survey of 20 Cases. J. M. Weller and S. Palmer Jr.—p. 773.
*Penicillin Therapy for Vincent's Ulcers of Tonsils. G. F. Joseph.—p. 778.
*Further Studies on Folic Acid in Treatment of Macrocytic Anemia. C. F. Vilter, T. D. Spies and Mary B. Koch.—p. 781.
Cotton as Suture Material. V. D'Ingianni.—p. 786.
Simultaneous Ruptured Tubal Pregnancy and Intrauterine Pregnancy, with Subsequent Delivery of Normal Infant. G. T. Howard Jr.—p. 788.
Use of Sodium "Vinbarbital" in Obstetrics. N. R. Davidson.—p. 790.
Fat Necrosis Studies: V. Effect of Soybean and Peanut Feeding on Blood and Urine Lipase of Rabbits and in Production of Fat Necrosis. M. P. Neal.—p. 793.
Psychiatric Salvaging of Industrial Manpower in Wartime. R. V. Seliger.—p. 799.
Leptospirosis: Report of Case from South Florida. J. H. Currens and R. C. Woodard.—p. 811.
Hereditary Deforming Chondrodysplasia. W. D. Stubenbord.—p. 816.
Report of 2 Cases of Paresis Treated with Penicillin. W. R. Rosanoff and J. K. Norman.—p. 819.
Burns Defined or Visualized. J. R. Green.—p. 822.
Critique of Free Skin Graft. J. F. Pick.—p. 827.
Intervertebral Disk Lesions: General Discussion and Consideration of Treatment in Military Service. E. Walker.—p. 832.
*Unusual Glandular Manifestations of Mumps: Extrasalivary Localization. H. J. Schmidt.—p. 834.
Narcolepsy. E. T. Brading.—p. 838.

Penicillin for Vincent's Ulcers of Tonsils.—Joseph selected patients for this series who had necrotic, ragged tonsillar lesions of the type commonly known as Vincent's ulcers. Patients with gingival lesions as the primary complaint were referred to the dental clinic for their entire treatment. The first 6 patients were hospitalized and given four 25,000 unit doses of penicillin intramuscularly at three hour intervals. All patients experienced symptomatic relief in from six to nine hours, and the lesion cleared up entirely in seven days. With these favorable results hospitalization was discontinued for subsequent cases, and efforts were directed toward simplifying the regimen. All patients henceforth were kept on full duty. During the first two months the mode of administration and size of dosage were varied in order to arrive at the most practical method and smallest effective dose. Ten patients received 50,000 units, 13 received 25,000 units and 3 received 12,500 units. Some of the 25,000 and all of the 12,500 unit injections were made directly into the tonsil capsule to determine whether this would increase the efficacy of the drug. Two patients were treated with penicillin by topical application. Five others were given the drug orally in cottonseed oil in doses of 50,000 units each before the next two meals when the stomach was empty. It was found that 100,000 units of penicillin in two 50,000 unit intramuscular doses three hours apart provide optimal treatment for Vincent's ulcers of the tonsil.

Folic Acid in Macrocytic Anemia.—Vilter and his associates administered synthetic folic acid (Lactobacillus casei factor) to 14 patients with macrocytic anemia in relapse. The group included both addisonian pernicious anemia and nutritional macrocytic anemia. The material was given intravenously, intramuscularly and orally. Thirteen of the 14 patients showed a positive hematologic response consisting of reticulocytosis and subsequent rise in erythrocytes, hemoglobin and leukocytes. Where treatment was continued, the regeneration continued to normal levels. Erythrogenesis occurred regardless of the route of administration of folic acid and regardless of the clinical classification as to pernicious anemia or nutritional macrocytic anemia. The responses to treatment paralleled those afforded by potent liver extract. Synthetic folic acid (L. casei factor) is a potent hemopoietic agent. It is probably no more effective than liver extract in the treatment of macrocytic anemia.

Unusual Glandular Manifestations of Mumps.—Schmidt reports the history of a boy aged 6 in whom epidemic parotitis was followed first by swelling of the submaxillary lymph nodes and later by femoral adenitis. Two other cases were seen during the same epidemic in which similar involvement of the femoral lymph nodes was noted without manifestations in the salivary glands. These cases not only demonstrate another manifestation of mumps but likewise substantiate the opinion that the infection is not to be considered a local disease with possible complications but rather a systemic disease capable of producing pathologic changes in many different and highly specialized tissues. The author cites reports which indicate that immunity is more a matter of immunity of previously involved glands than of a general or systemic condition. Frequently persons are encountered who have never contracted the disease even though repeatedly exposed. Considering the highly contagious character of the infection and the results obtained by Enders, it may be assumed that many patients have had the disease without salivary gland manifestations.

Surgery, St. Louis

18:663-794 (Dec.) 1945

*Surgical Treatment of Long Standing Deep Phlebitis of Leg: II. Supplementary Report. R. W. Buxton and F. A. Coller.—p. 663.
*Venous Pressures in Disorders of Venous System of Lower Extremities. M. D. Tyson and W. C. Goodlett.—p. 669.
Surgical Correction for Coarctation of Aorta. R. E. Gross.—p. 673.
Arteriovenous Fistula: Suture Technic for Producing Lateral Anastomosis; Experimental Study. R. A. Deterling Jr.—p. 679.
*Successful Removal of Foreign Bodies Within Pericardium: Report of 2 Cases. T. D. Watts and E. C. Toone.—p. 685.
Routine for Early Skin Grafting of Deep Burns. B. W. Rawles Jr.—p. 696.
Intrahilar and Related Segmental Anatomy of Lung. E. A. Boyden.—p. 706.
New Design for Raising Tubed Pedicled Flap. P. Gabarro.—p. 732.
Resuscitation of Severely Wounded Casualties. J. J. Lalich and J. M. Mason.—p. 741.
Peritoneal Absorption of Penicillin. B. G. P. Shafiroff.—p. 753.
Molded Bone Graft. A. J. Barsky.—p. 755.
Nylon Bone Suture. M. J. Rowe.—p. 764.
Herniation of Nucleus Pulposus: Refinement in Operative Technic. R. C. L. Robertson and W. G. Peacher.—p. 768.
Chylangioma Cavernosum Mesenterii: Report of Case and Review of Literature. J. M. Lubitz and R. W. Flynn.—p. 772.
Method of Retaining an Intravenous Needle in Situ. E. Sinaiko.—p. 777.

Surgical Treatment of Deep Phlebitis of Leg.—Buxton and Coller report observations on 24 patients with chronic phlebitis of the lower extremities. The largest numbers presented themselves because of chronic recurring ulceration around the ankle. Ligation of the left femoral vein was done most frequently. Two patients had bilateral vein ligations. The common iliac vein was ligated once. Seven patients with long standing phlebitis of both lower extremities underwent ligation of the inferior vena cava. Patients on whom vein ligation has been tried have been followed and observed during their postoperative period with much greater intensity and care than usual in this disease. This has undoubtedly influenced the end results. Had this not been done, the good results up to the present time might well have been no different than with other forms of treatment. How much the end results are influenced by the operative procedure and how much by the constant postoperative care cannot be stated. The noteworthy end result is the high incidence of healing of stasic ulcers. There has been immediate and permanent healing of a certain number of ulcers. In others healing has been delayed or ulceration has recurred and healing has taken place only after ligation of newly developed superficial varices. The results were most disappointing in those in whom ligation was done in the absence of stasic ulceration. A large number of this class of patients will eventually develop induration, pigmentation and ulceration, perhaps many years later. In these, venous ligation was considered an attempt not only at therapy but at prophylaxis. From the standpoint of therapy the treatment may be considered a failure. It remains to be seen whether subsequent ulceration has been prevented in these patients. A comparison between patients treated with femoral vein ligation, iliac vein ligation and caval ligation cannot be made at present. The magnitude of the operative procedure is considerably greater, the higher in the venous tree ligation is carried.

Venous Pressures in Disorders of Venous System of Lower Extremities.—Tyson and Goodlett usually took the venous pressure in one of the veins of the foot or ankle. The patient is placed in the supine position and the table adjusted so that a base line corresponding to the auricular level of the heart can be measured on the manometer. The largest caliber needle that can be introduced in the vein is used. The most satisfactory size is number 19. The authors use one of two methods. In one method the system of tubing is filled with isotonic solution of sodium chloride. The 3 or 4 inches of tubing to be attached to the needle is then filled with 2.5 per cent sodium citrate solution and the glass connector attached to the needle already in the vein. The solution in the glass tubing is slightly above the base line of the heart level. Blood is allowed to flow into the cannula and tubing, and the maximum elevation of solution in the glass tubing is read as the venous pressure. In the second method the system is filled with 2.5 per cent citrate solution and a three-way stopcock is used to connect the needle and the tubing. The citrate solution in the glass tubing is slightly above the expected venous pressure. The apparatus is then attached to the needle in the vein and the citrate solution allowed to run into the vein. When no further citrate solution runs into the vein, the pressure of the column of citrate then equals the venous pressure. The venous pressure in the lower part of the leg will rise when the femoral vein of the lower leg is occluded. A large number of pressure determinations were made. Venous pressure determination is important in the diagnosis of edema of the lower extremities. If the venous pressure is normal in the lower part of the legs after exercise it is fair to assume that the major venous channels of the lower part of the legs are patent and that the cause of the edema must be found elsewhere. Venous pressure determinations would appear to be valuable in following cases of venous thrombosis in the lower extremities during convalescence. It may be difficult to determine in which lower extremity a venous thrombus is present or whether the thrombus is present in both. Venous pressure determinations are useful in determining this point. Venous pressure determinations are more accurate than phlebograms to determine the patency of the venous system.

Removal of Foreign Bodies in Pericardium.—Watts and Toone report the histories of 2 soldiers, both aged 21, in whom foreign bodies were removed from the pericardial sac. Another case had been reported previously. At operation each of these patients showed extensive and dense adhesions between the epicardium and pericardium and around the foreign body which is thought to be responsible for the symptomatology and abnormal objective findings encountered. The patient's symptoms, the objective evidence of pericardial or myocardial changes and the possibility of future complications are to be balanced against the operative risk. Pain of a dull aching character in the low substernal and precordial areas, increased by exertion but without tendency to radiate to the neck or down the arms, was a common complaint of 2 of the patients. Following the surgical removal of the foreign body there was complete relief of pain. There was anxiety regarding the foreign body, and the men expressed a desire to have it removed, offered no objection to surgical intervention even though made well aware of the serious nature of the operation, and were most gratified after its successful completion. Surgical removal is advisable before the foreign body becomes encased in dense adhesions or fixed in an inaccessible area.

Wisconsin Medical Journal, Madison

44:1141-1256 (Dec.) 1945

Penicillin in Treatment of Meningitis. M. J. Fox.—p. 1161.
Treatment of Pilonidal Cysts. N. E. Bear and V. F. Woldman.—p. 1166.
Role of Demerol in Obstetrics. H. M. Carter.—p. 1170.
Renal Hypertension: Nephrectomies at Wisconsin General Hospital. C. E. McKeown.—p. 1173.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Dermatology and Syphilis, London

57:197-244 (Nov.-Dec.) 1945

Pityriasis Rubra Pilaris and Vitamin A. A. D. Porter and E. W. Godding.—p. 197.

British Medical Journal, London

2:795-832 (Dec. 8) 1945

*In Vitro Sensitivity of Hemophilus Influenzae to Penicillin: Special Reference to Meningeal Strains of Pittman's Type b. M. Gordon and K. Zinnemann.—p. 795.
Meningitis Due to a Penicillin and Sulfonamide Sensitive Pittman b Strain of Hemophilus Influenzae: Recovery. D. G. McIntosh and Constance F. Drysdale.—p. 796.
Repatriation: Psychiatric Study of 100 Naval Ex-Prisoners of War. W. P. Mallinson and W. Warren.—p. 798.
*Sixth Nerve Paralysis After Spinal Analgesia. W. A. Fairclough.—p. 801.
Typhoid Complicated by Benign Tertian Malaria. A. S. Bookless and J. M. Naftalin.—p. 804.
Impressions of Surgery in West Africa. J. K. Willson-Pepper.—p. 812.

Sensitivity of Hemophilus Influenzae to Penicillin.—Gordon and Zinnemann examined 15 Hemophilus influenzae strains from the nasopharynx and 28 H. influenzae strains from bronchial secretions for penicillin sensitivity. The growths of 31 of these respiratory strains were completely inhibited by 2.5 units of penicillin per cubic centimeter of medium. Only 7 strains showed growths on mediums containing 5 units of penicillin per cubic centimeter, with evidence of considerable inhibition. The growths of 18 H. influenzae strains, 16 of which were of Pittman's type b and all of which were isolated from the cerebrospinal fluid, were completely inhibited on medium containing 5 units of penicillin per cubic centimeter. The growths of 16 strains were completely inhibited with 2.5 units of penicillin, the growths of 12 strains completely inhibited with 1 unit of penicillin, and only 3 strains completely inhibited with 0.5 unit of penicillin per cubic centimeter of medium. It is suggested that penicillin therapy is worthy of trial in cases of H. influenzae meningitis.

Sixth Nerve Paralysis After Spinal Analgesia.—Fairclough presents a theory which would account for the fact that the sixth cranial nerve often shows signs of injury after spinal analgesia earlier than any of the other cranial nerves and that it may do so even if its anatomic disadvantages do not exist. The varying stability of binocular vision makes it possible that any cerebral pathologic condition, even slight in degree, would cause a breakdown of the binocular system with resulting diplopia. Examination of these functions before and after spinal injection may prove of interest. Of the 10 patients studied 9 were examined after they considered that their eye condition had returned to *normal. Each of them had* some degree of esophoria and none had exophoria. The common symptoms following lumbar analgesia are headache, pain in the neck, dizziness, photophobia—the latter two symptoms may be due to threatening or partial diplopia—and diplopia. The 10 patients with paralysis of the sixth nerve appeared among 2,021 patients who had received spinal analgesia.

2:833-872 (Dec. 15) 1945

Survey of Fracture Treatment. C. M. Page.—p. 835.
Nutrition in Vienna in September 1945. M. Pyke.—p. 839.
*Toxic Effects of 2,2-bis (p-Chlorphenyl) 1,1,1-Trichlorethane (DDT) in Man. R. A. M. Case.—p. 842.
*Fatal Case of DDT Poisoning in Child, with Account of Two Accidental Deaths in Dogs. K. R. Hill and G. Robinson.—p. 845.
Observations on Keratoconjunctivitis: Cases Seen in Military Hospitals. R. J. Buxton.—p. 847.

Toxic Effects of DDT in Man.—Case states that DDT has been shown to be toxic to a variety of mammals. The main pathologic features are liver damage, loss of weight, anorexia, mild anemia, polymorphonuclear leukocytosis, and damage to the central nervous system. In the one case of human intoxication to be found in the literature, Wigglesworth reports heaviness and aching of the limbs, sleeplessness, "spasms of extreme nervous tension," prostration of such a degree as to confine the sufferer to bed for a fortnight, and involuntary muscular twitchings over the whole body on at least three occasions. Recovery had not taken place at the end of the year. The victim had been exposed to concentrations of DDT in acetone and in powder form far in excess of levels that might reasonably be met with in the routine use of the insecticide. The problem under investigation was the possible toxic effect of the use of a distemper containing 2 per cent by weight of the dry film of DDT in circumstances where the paint would be covered with a thin film of oil, the ambient temperature would be such that personnel at risk would be largely unclothed, their skin would be oily and sweaty, because of cramped accommodation large areas of oily skin would come into contact with the paint, and efficient washing of the body surface could take place only at relatively infrequent intervals. Two healthy male subjects were employed for this investigation. During the control period no measurable changes took place apart from a fall in p_H in the urine. After exposure to DDT distemper, there occurred diminution of reflexes, alteration in auditory acuity in both subjects, and patchy peripheral anesthesia in one subject. The production of a fine tremor in one subject is also probably significant. A great transitory fall of systolic pressure was observed in both subjects. The hematologic observations are of greatest importance, because they suggest that hematologic examinations, employing siderocyte levels, hemoglobin and red cell estimations, reticulocyte counts and leukocyte counts, and also urinary indoxyl sulfate estimations might all be useful tests in the prevention or early diagnosis of DDT intoxication. These experiments show DDT distemper to be toxic only under special conditions, possibly more severe than would obtain in practice, and do not form the basis for condemnation of the widespread use of DDT if proper precautions are taken. They do, however, emphasize that DDT intoxication in human beings is a hazard to be considered and guarded against.

Fatal DDT Poisoning in Child.—Hill and Robinson report the case of a child, aged 1 year and 7 months, who found a bottle of 5 per cent DDT in kerosene and drank about 1 ounce. Within ten minutes he began to cough and vomit violently, whereupon he was given palm oil. In a short while coughing and vomiting ceased, but his general condition worsened, and at about 12:30 p. m. he became comatose and had convulsions. Later the stomach was washed out and atropine was given, but the child died. Death was due to pulmonary edema, probably from paralysis of the respiratory center. The lethal dose was approximately 150 mg. per Kg. of body weight of commercially pure DDT—an amount somewhat less than that found for experimental animals. Two fatal cases of chronic DDT poisoning in dogs are described, with a histologic picture of centrolobular necrosis of liver and tubular degeneration of kidney with considerable calcification.

Irish Journal of Medical Science, Dublin

239:647-678 (Nov.) 1945

Visceral Sensation. B. A. McSwiney.—p. 647.
Biochemistry Yesterday and Tomorrow. W. R. Fearon.—p. 659.
Etiology of Trachoma in Ireland. P. N. Menan.—p. 670.

Lancet, London

2:765-800 (Dec. 15) 1945

Hospital, Industry and the Injured Man: Surgeon's Thoughts on Rehabilitation. G. R. Girdlestone.—p. 765.
Resettlement of Disabled. J. W. T. Patterson.—p. 766.
*Clinical Value of Muscle Biopsies. R. E. M. Bowden and E. Gutmann.—p. 768.
Exposure of Posterior Horn of Medial Meniscus. J. Charnley.—p. 771.
Thrombocytopenic Purpura with Normal Bleeding Time: Recovery After Splenectomy. A. I. Suchecki and V. Glass.—p. 772.
Probable Relapse of Malignant Tertian Malaria After Thirteen Years. L. Nagley.—p. 773.
Orthopedic Treatment of Ankylosing Spondylitis. R. K. W. Kuipers.—p. 774.
*Louse Borne Relapsing Fever Treated with Calcium Gold Keratinate. M. Wolman, M. Omar and M. Abu-Taleb.—p. 775.

Clinical Value of Muscle Biopsies.—According to Bowden and Gutmann muscle biopsy besides giving information about the state of the muscle fibers, is a form of nerve biopsy, because nerve fibers or empty Schwann tubes or motor end plates are almost always found among the muscle fibers. In a series of 140 biopsies from 86 cases only 7 did not contain such elements. The presence of empty Schwann tubes is evidence of a degenerative lesion of lower motor neurones, and the finding of normal fibers and empty tubes indicates a partial lesion. Indications for muscle biopsy: (1) To determine the state of muscles where atrophy is advanced, or where a vascular lesion is suspected. Surgical repair of nerves or long continued physical treatment is valueless if the muscles have been irreparably damaged. (2) To aid in the diagnosis of the type of lesion in the nerve and to determine whether satisfactory regeneration is taking place in partial or recovering lesions. (3) To differentiate between paralysis of myogenic origin and disease of the lower motor neurone. (4) There are special indications for the use of biopsies in certain cases of poliomyelitis: it is possible to decide whether the state of the muscle is such as to make further physical therapy valueless; biopsies from long-standing cases of poliomyelitis have suggested that axonal regeneration can take place. A piece of the affected muscle is removed under local or general anesthesia, the size varying with the type and size of the muscle; if possible the piece should be at least 1 cm. long by 0.5 cm. wide and thick. The specimen is placed at once on a strip of cardboard to prevent distortion and fixed immediately in 10 per cent formol saline. If the piece is sufficiently large, half is used for frozen sections and the remainder embedded in paraffin.

Calcium Gold Keratinate in Louse Borne Relapsing Fever.—Wolman and his associates treated alternate patients (80 of a total of 160) with louse borne relapsing fever by intravenous injection of 0.5 Gm. of neosolganal in 5 cc. of distilled water. Two other groups of 20 patients each were given the gold preparation. One was given 1 Gm. of neosolganal in 5 cc. of water and the other 1 Gm. in 5 cc. of a 10 per cent solution of calcium thiosulfate. Toxic reactions were watched for and observed in two fifths of the aforementioned group of 80 patients. The reactions were mild. There was no significant difference between the reactions in those who were given the drug in water or in calcium thiosulfate. Neosolganal does not constitute a hazard to the patient. The patients were free from spirochetes and apyrexial within a short time (usually twenty-four hours or less) of the injection. The incidence of relapses in the treated group was significantly reduced. Three patients in the experimental group and one in the control group died. This difference is considered to be due to chance.

Proceedings of Royal Society of Medicine, London

39:1-58 (Nov.) 1945

Observations on Certain Rheologic Properties of Human Cervical Secretion. A. F. Clift.—p. 1.
New Facts Concerning Prognosis and Treatment of Carcinoma of Cervix by Radiation. M. Donaldson.—p. 10.
Surgical Aspects of Urinary Bilharziasis. R. O. Ward.—p. 27.
Medical Career of Jean-Paul Marat. H. P. Bayon.—p. 39.
International Biologic Standards: Prospect and Retrospect. P. Hartley.—p. 45.

Archives des Maladies du Cœur, Paris

38:105-148 (May-June) 1945

Diagram (PV) of Action of Intraventricular Pressure. L. Martin.—p. 105.
Disturbances of Sinus Rhythm and Variations of Pattern of Ventricular Complexes in the Course of Septal Deformity. J. Lequime, M. Segers and H. Denolin.—p. 108.
*Cardiac Myxedema and Hunger Disease. A. Tourniaire.—p. 114.
Malignant Endocarditis of Pulmonary Orifice in the Course of Fallot's Tetrad. P. Squlié and L. Fourestier.—p. 118.
Seven Cases of Cardiac Thrombosis Associated with Apparently Healthy Endocardium and with Acute Fatal Course. R. Letac.—p. 121.

Cardiac Myxedema and Hunger Disease.—Tourniaire reports a case of hunger disease characterized by emaciation, bradycardia, nocturia, edema of the legs, slight anemia and hypoproteinemia. Cardiac hypertrophy and a drop of the electric voltage in the absence of any sign of cardiac insufficiency suggested cardiac myxedema. The edema disappeared within one week as the result of rest and of the administration of liver extract and thiamine hydrochloride solution intramuscularly. The cardiac hypertrophy was not altered. The measurement of basal metabolism revealed a diminution of 35.8 per cent. Thyroid treatment was instituted. After twenty-three days of this treatment the heart shadow decreased considerably. The electrocardiogram demonstrated improvement. On the fifty-sixth day of the treatment the patient a metallurgic workman aged 56, gained 2 pounds (900 Gm.), the pulse rate was 80 and arterial tension was 150/90. Occurrence of myxedema in the course of hunger disease proves the part played by thyroid insufficiency in deficiency conditions and supports Van Bogaert's concept of alcoholic beriberi.

Monatsschrift für Psychiatrie und Neurologie, Basel

110:293-348 (No. 6) 1945

Psychologic Syndrome in Tumors of Frontal Lobes and of Diencephalon. G. de Morsier and A. Rey.—p. 293.

Clinical Significance of Cavum Septi Pellucidi. L. Benedek and L. von Angyal.—p. 309.

*Upper Limits of Normal Protein Content in Cerebrospinal Fluid. V. Kafka.—p. 325.

Spina Bifida Occulta with Atrophy of a Lower Extremity and Neurologic Crises. C. I. Urechia, L. Dragomir and T. Dragomir.—p. 340.

Protein Content of Cerebrospinal Fluid.—Kafka examined 500 cisternal fluids and found that the upper limit of the total protein content is 1.1 graduation marks in the cisternal fluid as compared to 1.3 graduation marks in the lumbar fluid. That would be approximately 26.4 mg. per hundred cubic centimeters for the cisternal fluid compared to 31.2 mg. per hundred cubic centimeters for the lumbar fluid, if the graduation mark of the special tube is accepted as equivalent to 24 mg. per hundred cubic centimeters. He designates his method of determination as "protein relation," because it is his aim to relate the individual values and compare them in different diseases. This method of protein relationship is suited for the determination of the upper limits of the total protein content. Various observations have indicated that for the determination of the protein relation it is essential not only to ascertain the centrifugation time and the number of revolutions but also to determine the protein content of a graduation mark. If this is done, great differences will not be detected between the results of the protein relation and the Kjeldahl determination. It is also pointed out that the different modifications of the Kjeldahl method involve certain sources of error. The author further mentions a serial method which is a simple control and directs attention to numerous minor manipulations that help to avoid errors.

Bol. Oficina San. Panamericana, Washington, D. C.

24:577-672 (July) 1945. Partial Index

*Results of Pulmonary Lavage in Bacteriologic Diagnosis of Tuberculosis. M. de Abreu.—p. 601.

Pulmonary Lavage in Diagnosis of Tuberculosis.—De Abreu performed pulmonary lavage on 80 patients with suspected pulmonary tuberculosis who either did not expectorate or whose sputum was negative for tubercle bacilli. One or 2 cc. of a 5 per cent tutocain solution was applied to the pillars of the fauces, the uvula and the pharynx. The lavage was performed five minutes later by introducing into the trachea by the supraglottic approach 20 to 40 cc. of isotonic solution of sodium chloride during inspiration. Cough and expulsion of contents from the lung were thus provoked. Tubercle bacilli were demonstrated in 19 out of 80 cases. Results were negative in fibrous and calcified pulmonary lesions and positive in the exudative or the fibrous exudative type, as well as in the presence of tuberculous cavitation.

Día Médico, Buenos Aires

17:1246-1265 (Oct. 29) 1945. Partial Index

*Cerebrospinal Fluid in Jaundice. R. González Bosch, E. D. Andia and Elvira Carri.—p. 1252.

Cerebrospinal Fluid in Jaundice.—González Bosch and his collaborators studied the cerebrospinal fluid of 15 patients with jaundice. The group included 2 patients with syphilis, 1 with neurosyphilis, 2 with cirrhosis of the liver, 3 with catarrhal jaundice, 6 with cancer of the liver, the bile ducts or the head of the pancreas and 1 with stone in the common bile duct. The changes of the cerebrospinal fluid in jaundice consisted in xanthochromia and the presence of bilirubin and bile salts. A relationship between the concentration of bilirubin in the blood and that in the cerebrospinal fluid was not present. The amount of sugar in the cerebrospinal fluid was normal even in cases in which the fluid contained bile salts.

Acta Medica Scandinavica, Stockholm

122:281-380 (Oct. 18) 1945

*Effect of Intravenous Injections of Acetylcholine in Man. II. Control of Crises of Paroxysmal Tachycardia. M. Segers, J. Lequime and H. Denolin.—p. 281.

Treatment of Thyrotoxicosis with Methylthiouracil. E. Meulengracht and K. Schmith.—p. 294.

Influence of Posture on Kidney Function: I. Fall of Diuresis in Erect Posture. C. Brun, E. O. E. Knudsen and F. Raaschou.—p. 315.

Id.: II. Glomerular Dynamics in Passive Erect Posture. C. Brun, E. O. E. Knudsen and F. Raaschou.—p. 332.

Abnormal Electrocardiogram: III. Clinical Significance of Right Axis Deviation. K. Larsen and P. Magnusson.—p. 342.

*Weltmann's Serum Coagulation Reaction—A Simple Test of Considerable Clinical Value. R. Berlin.—p. 360.

Control of Paroxysmal Tachycardia with Acetylcholine.—Segers and his co-workers report 6 cases of paroxysmal tachycardia of extraventricular origin in which control of the crisis was obtained within less than thirty seconds of the time of intravenous injection of 0.02 Gm. of acetylcholine. In cases in which immediate control cannot be obtained, injections must be repeated at three to four minute intervals with increasing doses of 0.04, 0.06, 0.08 and 0.1 Gm. The dose may vary from 0.01 Gm. to 0.1 Gm., but in the same patient the required dose does not vary from one paroxysm to another. Mild secondary reactions were limited to attacks of coughing, nausea, a sensation of emptiness or of warmth in the head or a few palpitations. The absence of dangerous sequels to the injections is due to the very rapid destruction of the acetylcholine by the organism. Acetylcholine is much better tolerated than acetylmethylcholine chloride (mecholyl) or carbaminoylcholine chloride (doryl). The constancy of the favorable results, the mild and brief secondary reactions and the rapid control of the paroxysms suggest that acetylcholine is to be considered the agent of choice in the treatment of paroxysmal tachycardia.

Weltmann's Serum Coagulation Test.—Berlin reports experiences with the Weltmann test at the department for internal diseases of the district hospital in Lidköping, Sweden. A maximum shortened coagulation band was observed in pneumonia, exudative pleurisy, septic processes and nephrosis. Eleven of 14 cases of coronary infarction gave a shortened coagulation band on the fourth to the fifth day after the onset of the infarct, and the same reaction continued for a considerable time. The sedimentation reaction became normal much earlier. Three cases did not give a shortened coagulation band, but 1 case gave a shortened coagulation band a day earlier than the demonstration of the infarct by the electrocardiogram. A solution for the controversy with regard to the coagulation band in myeloma is suggested: Myeloma associated with nephrosis gives a shortened coagulation band, and myeloma without this complication gives a lengthened coagulation band. Weltmann's test is of great importance in pernicious anemia; 88 of 96 cases of various stages of remission, as well as of recurrence of pernicious anemia, gave coagulation band values around 7 or above 7. A shortened coagulation band suggests a malignant process. The Weltmann test aids in the differential diagnosis of jaundice. The author reports 53 cases of hepatocellular damage: 49 cases of hepatitis, 1 case of jaundice due to neoarsphenamine, 1 case of icterus intermittens juvenilis (Meulengracht) and 2 cases of yellow atrophy of the liver. Coagulation bands longer than 7½, according to Weltmann, are typical for these conditions. Only 10 of 53 cases (20 per cent) gave shorter values. Twenty-three of the author's 27 cases of obstructive jaundice on the contrary showed normal or shortened values of the coagulation band. In 4 cases of this group (15 per cent) the coagulation values were 7½ and 8 and thus were misleading.

Book Notices

Clinical Neurology. By Bernard J. Alpers, M.D., Sc.D., Professor of Neurology, Jefferson Medical College, Philadelphia. Cloth. Price, $8. Pp. 797, with 232 illustrations. Philadelphia: F. A. Davis Company, 1945.

Here is a new textbook of neurology which is well organized and thoroughgoing. It should receive a cordial reception. It will prove most useful to both students and practitioners. It is clearly written and well illustrated and has a good index. The typography is pleasing. The book has several valuable characteristics which differ from most other neurologic textbooks. Among these is the emphasis on symptomatology, on the clinical manifestations of nervous diseases and on differential diagnosis. There is one chapter, the fourth, devoted to a discussion of headache, vertigo, coma and pain. There are numerous tables enumerating signs and symptoms of various diseases and outlining the principal considerations in differential diagnosis.

In spite of these many favorable aspects of the book, and they greatly outnumber and outweigh the unfavorable ones, there is much room for improvement. There is much unnecessary and at times tedious repetition. This is constant in the text in little things. In a larger way, probably the most obvious example is the almost word for word repetition of the discussion of Sydenham's chorea on pages 383-385 and 620-623.

Some of the more specific criticisms which should be noted are the omission of the discussion of the surgical treatment of Ménière's syndrome on pages 124-126, the statement on page 200 that the pain of trigeminal neuralgia often arouses the patient from his sleep, the inclusion on page 201 of a discussion of jaw-winking reflex in the section on trigeminal neuralgia and the uncritical discussion of the treatment of tabes dorsalis on page 256. This lack of critical presentation of material collected from the literature is notable in several places and is serious in a book for students and general practitioners. On page 410 in table 39 there is reproduced a compilation of the contributory causes of cerebral hemorrhage which can hardly fail to give the student an erroneous impression. As the text indicates, arterial hypertension is by all odds the most common contributory cause of such hemorrhages and cerebral aneurysm is probably next. This is hardly a conclusion to be drawn from this table. On page 425 in table 41 similar misinformation is presented. In the table arteriosclerosis is a factor in only 54.7 per cent of the cases of cerebral thrombosis. In the immediately subjacent text it is stated that sclerosed cerebral vessels were found in 98.6 per cent of such cases. Similarly a tabulation on page 638 of precipitating factors in multiple sclerosis gives an inaccurate picture of the development of that disease. On page 697 the author correctly states that vitamin E is of little value in the treatment of amyotrophic lateral sclerosis and then proceeds to encourage the use of this worthless form of therapy by outlining in detail the method of administration. On page 752 the questionable clinical symptomatology of "benign frontal hyperostosis" is discussed at length and as though the direct relationship between the hyperostosis and the symptoms detailed was an accepted fact. In the discussion of extradural hemorrhage on pages 344-345 and of subdural hemorrhage on page 351, it is stated that such patients are "in shock," obviously with a most erroneous concept of what shock is. Patients are not in "profound shock" who have "a fall of the pulse, with a rise in blood pressure." Figure 110 would be more intelligible to most readers if it was inverted. The discussion on page 375 of mumps encephalitis and meningitis is confused and confusing.

However, this is a useful book, well organized and containing much valuable information.

The Hospital Purchasing File 1945-1946. Established 1919 as The Hospital Yearbook by The Modern Hospital Publishing Co., Inc. Directory of Hospital Products, Manufacturers' Catalogs, Reference Data. Twenty-third edition. Boards. Various pagination, with illustrations. Chicago: Purchasing Files, Inc., [n. d.].

This volume on hospital products and purchasing is a continuation of the Hospital Yearbook originally established in 1919. As in previous years, the book contains a vast amount of information including a directory of hospital equipment and supplies, an alphabetical list of manufacturers and distributors and twenty-two groups of manufacturer's catalogues classified on a departmental as well as a functional basis. The catalogues relate to administrative departments, food preparation and service, housekeeping, laundry, building construction, maintenance and repairs, plant operation, professional equipment and other facilities pertaining to surgery, obstetrics, hospital nurseries, anesthesia, physical and occupational therapy, and pharmacy, x-ray and laboratory departments. Featured also are special articles, references and plans for individual departments, check lists of hospital equipment and supplies, requirements for a 100 bed general hospital, and directories of the principal hospital associations and the federal and other national agencies serving the hospital and allied fields. The book is an excellent source of information and reference for hospital administrators and other personnel concerned with the services of supply, maintenance and hospital buying.

A Textbook of Surgery. By John Homans, M.D. Compiled from Lectures and Other Writings of Members of the Surgical Department of the Harvard Medical School. With a Special Bibliographical Index. Sixth edition. Cloth. Price, $8. Pp. 1,278, with 530 illustrations by Willard C. Shepard and others. Springfield, Ill., Charles C Thomas, 1945.

This excellent textbook of surgery is now in its sixth revision in fourteen years. This is indicative of the state of flux existing in the entire field of medicine. In surgery the recent accentuation of specialization makes the creation and revision of a general textbook on the subject increasingly difficult. This is reflected in the retention of outmoded concepts, a lag in correlation with recent advances in basic sciences and a reluctance to include newer treatments. The author has admirably overcome these objections in previous editions and has done considerably better in this one. It is pleasing to note the inclusion of lessons learned from the war, not as afterthoughts, but as dynamic factors in the modern surgical management. Fundamentally in outline and pagination there has been little change. The writing, as always, is clear and descriptive. Certain outmoded illustrations and descriptions have been eliminated to good advantage. A word about the excellent section on anesthesia by Dr. Knight should be included. It can be said without hesitation that this basic teaching contribution to the field of surgery has more than maintained its previous standards of usefulness.

Personality in Arterial Hypertension. By C. A. L. Binger, N. W. Ackerman, A. E. Cohn, H. A. Schroeder and J. M. Steele. Psychosomatic Medicine Monographs [Second Series, No. 8]. Cloth. Price, $3. Pp. 228. New York: American Society for Research in Psychosomatic Problems, 1945.

This monograph is a contribution to the field of psychosomatic medicine with 24 case histories and tables. The evidence, which is detailed, establishes conclusively the importance of psychologic causes for hypertension and explains many of the cases that would have been called in an earlier period essential hypertension. One of the patients in the series was investigated by psychoanalytic technics. The authors do not conclude that the disorder of personality is the cause of the hypertension; they conceive rather that the psychologic disorder and the physiologic disorder may represent reflections of a basic failure foreshadowed early in life.

Requirements of Premarital Legislation. By Margaret R. Zwally, M.A., and John F. Mahoney, M.D., Director, Venereal Disease Research Laboratory, United States Marine Hospital, Staten Island, N. Y. United States, Federal Security Agency, Public Health Service Bulletin No. 98. Paper. Price, 10 cents. Pp. 20. Washington, D. C.: Supt. of Doc., Government Printing Office, 1945.

The Venereal Disease Research Laboratory, U. S. Marine Hospital, Staten Island, New York, presents in this pamphlet a brief analysis of state laws requiring premarital physical examinations and blood tests as they relate to the venereal diseases. Information in summary form is given relative to the qualifications of physicians who may collect the required specimens or perform the required examinations, the laboratories approved for making the required tests and where the required forms may be obtained. Information is also given in tabular form concerning the type of examination required, the time needed to complete arrangements, appearance in person required to obtain license and source of information concerning waivers and so on. The material is current as of Jan. 1, 1945 and prior to publication was submitted for approval to the respective state health offices.

Red Surgeon. By George Borodin. Cloth. Price, $4.50; 15s. Pp. 224, with 19 illustrations. Forest Hills, N. Y.: Transatlantic Arts; London: Museum Press Limited, 1944.

George Borodin and Maxim Murov got to know and admire each other early in boyhood. The friendship was a clandestine one, for George was the son of a nobleman and Maxim the son of a revolutionary. When the revolution came, Borodin immigrated to England and in time became a prominent surgeon. Murov remained in Russia and in his turn soon came to occupy the position of one of the most gifted young surgeons and research workers. In the summer of 1942 the Germans were making their second great attempt to sweep everything before them. About this time Borodin received a bulky package which also contained a letter. It was from Murov: "I am writing in a little village in the southern sector. We have fought here for days and now the end must come. In front of us are Germans, behind us are Germans, to the left and to the right of us are Germans. Each hour brings the steel ring a little closer. There are not many of us left, and none of us will ever be prisoners. Some of us will die, as our comrades have died, not fearing death. Whichever is my fate, I am ready for it."

The second part consists of Murov's diary, translated and edited by the author. Two features of it should be of particular interest to the reader. One deals with the organization of the military medical service of the Soviet Union and the other with the man Murov. The principle of bringing fully equipped hospital units to the very front, and the principle of specialization, as practiced by the military organization in the Soviet Union, are well known here and are not unique with them. Of greater interest is the progress of a man from the cloister of the laboratory to the cauldron of the battlefield. One experiences in it first a shock and horror of war on a sensitive and discerning soul, and then the gradual acclimatization. Murov, primarily a scientist, a surgeon and a lover of humanity, slowly becomes a fighter and is the epitome of his people. The woman doctor Irina, a remarkable woman indeed, symbolizes the modern Soviet woman, seeing no reason why the burdens that men bear should not also be borne by women. She died a soldier's death. The book is an interesting psychologic study of a fine character symbolic of his profession.

Men Without Guns. By DeWitt Mackenzie, War Analyst of The Associated Press. Descriptive Captions by Major Clarence Worden, Medical Department of the United States Army. Foreword by Major General Norman T. Kirk, Surgeon General of the United States Army. Cloth. Price, $5. Pp. 47, illustrated with 137 plates from the Abbott collection of paintings owned by the United States Government. Philadelphia & Toronto: Blakiston Company, 1945.

Twelve of the artists who traveled with the medical corps of the Army and the Navy during the war and who showed in paintings made in the scene of battle the doctors, the nurses and the men of the medical corps in action are represented in this magnificent album of paintings of doctors at war. Of the plates, 118 are in full color. The project was approved by Surgeon General Kirk and sponsored by the Abbott Laboratories, which paid for the making of the paintings and then donated them to the United States government. Accompanying the pictures is a brief text which includes some account by the artists of their own experiences. The areas covered include the campaigns in the South Pacific and in Italy, Normandy and Germany. The paintings bring to life many an action that seems in photography without human sentiment. These paintings have power to stir emotion beyond anything that comes from a photograph. To the 60,000 physicians who served in the war they will be an enduring reminder of experiences that are epochal even in the lives of men to whom crises come every day.

A Handbook for Dissectors. By J. C. Boileau Grant, Professor of Anatomy, University of Toronto, Toronto, and H. A. Cates, Associate Professor of Anatomy, University of Toronto. Second edition. Fabrikoid. Price, $2.50. Pp. 390, with 10 illustrations. Baltimore: William Wood & Company, 1945.

This small book was originally intended to be used in conjunction with "A Method of Anatomy" for the purpose of supplying additional directions to dissectors. The present edition has been thoroughly revised and does not contain page and figure references to the larger book. This accomplishes two things. First, it is now possible for the present edition of the handbook to gain recognition in its own right. Second, the handbook may now be used as a guide for dissectors in schools where the "Method of Anatomy" has not been adopted as a textbook. Enough information has been supplied for the proper orientation of the beginner. The more fundamental structures have been indicated by a systematic discrimination in the use of bold type. The directions are clear and concise. This book should be of great value to students who are not furnished with directions for dissection by their own teacher.

Using Standards and Labels: A Problem of the Modern American Consumer. A Unit for High School Students. Consumer Education Series Unit No. 6. Paper. Price, 25 cents. Pp. 128, with illustrations. Washington, D. C.: Consumer Education Study, National Association of Secondary-School Principals, A Department of the National Education Association, 1945.

Publications of the Consumer Education Study of the National Association of Secondary-School Principals of the National Education Association are intended to promote consumer education, which is undergoing rapid development in secondary schools. Because the content of courses varies with the school, those responsible for this series of teaching-learning units have concentrated on general principles underlying consumption and have not concentrated on the skilled purchasing of specific commodities. The units are intended to help young people to become more intelligent and conscientious consumers. The Consumer Education Study, which is financed by funds from the National Better Business Bureau, has prepared in this unit an interesting survey worthy of reading by the general population; its use should not be confined to secondary schools. It is accurate, informative and provocative; it will force the reader to appreciate the need of scientifically developed standards and the value of purchasing products which meet these standards.

The Person in the Body: An Introduction to Psychosomatic Medicine. By Leland E. Hinsie, M.D., Professor of Psychiatry, College of Physicians and Surgeons, Columbia University. New York. Cloth. Price, $2.75. Pp. 263. New York: W. W. Norton & Company, Inc., 1945.

Here for the average American physician is a good consideration of the fundamentals of psychosomatic medicine. The book is well written, the cases are well selected and the material is definitely pointed toward the general practitioner. One of the most valuable chapters is the one headed "Varieties of Psychosomatic Syndromes." Other important chapters are called "The Body Protects the Person in It" and "Types of Neurotic Personalities." A final chapter entitled "Your Part in Psychotherapy" is directed particularly to the patient who requires psychosomatic medicine.

The Yearbook of Psychoanalysis. Volume I. Managing Editor, Sandor Lorand, M.D. Cloth. Price, $10. Pp. 370. New York: International University Press, 1945.

Under the editorship of Dr. Lorand there are here collected from a variety of publications in the field of psychoanalysis a number of important essays. The present volume covers the years 1942 through 1944. Future volumes are to be concerned only with current contributions of the previous year. Many of the leading American authorities in the field of psychoanalysis and psychosomatic medicine contribute, and several of the essays are concerned largely with war.

A List of Books and Pamphlets on the History of Surgery and Orthopedic Surgery, with Supplement, Additions and Corrections. The Collection of Dr. H. Winnett Orr, M.D. Second edition. Cloth. Pp. 207, with illustrations. Lincoln, Nebraska: The Author, 1945.

This volume is essentially a catalogue of works on the history of surgery and orthopedic surgery in the library of Dr. H. Winnett Orr. It includes as well many books somewhat remote from that field. A striking feature of the catalogue is the reproduction of title pages of many of the earlier publications.

A Surgeon Looks at Life. By Richard A. Leonardo, M.D., Ch.M., F.I.C.S. Cloth. Price, $2. Pp. 128. New York: Froben Press, 1945.

Dr. Leonardo presents fifteen chapters which represent fifteen philosophical essays on the subjects discussed. They range from considerations of faith cures and euthanasia to life after death and building a good life.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

RELAPSE WITH VIVAX MALARIA

To the Editor:—I am a medical officer of the Army of the United States and served overseas nineteen months in the Southwest Pacific area. While overseas we all took atabrine regularly to suppress symptoms of malaria. When I left the theater it was recommended that atabrine be continued for a period of twenty-eight days after arriving in the United States. I continued taking atabrine for forty-five days after my arrival and discontinued taking it Oct. 15, 1945. On November 6 I developed chills and high fever and was admitted to the hospital with the diagnosis malaria tertian, new. I shall be discharged within the next few weeks and have contemplated settling in Texas or some other Southern state. Are there any data as to the recurrences of malaria, disregarding new infections, with relationship to climatic conditions? Would it be more advisable to settle in a Northern state rather than in a Southern state? Major, M. C., A. U. S.

Answer.—The history of relapsing with vivax malaria two months after leaving the endemic area is common. As a matter of fact, 1.7 per cent of 2,579 patients at the Marine Barracks, Klamath Falls, Ore., had their initial attack over one year after leaving the endemic area. The use of atabrine after all chances of being reinfected are no longer possible only insures freedom of clinical symptoms as long as taken. It does not cure.

There is no conclusive evidence that recurrences of malaria are any more frequent or persistent in the Southern than in the Northern states, if reinfection possibilities are excluded, although there is some indication that altitude is beneficial, as it stimulates the hemopoietic system. Data to date indicate that Southwest Pacific malaria is self limited but unusually persistent. There is some evidence that rational therapy should consist in the treatment of relapses as they occur rather than continuous suppressive medication.

HYPERPIGMENTATION OF UNCERTAIN ORIGIN

To the Editor:—A woman aged 50 has been taking diphenylhydantoin (dilantin) sodium 0.1 Gm., capsules twice daily for thirty-two months with good control of epileptic seizures. She has been using Roux for many years as a hair dye. She is naturally of dark complexion and claims that her skin in the exposed area, i. e. above the clavicle and extending up into the cervical region, is becoming more deeply pigmented. There does seem to be an increased area of pigmentation in this region. Physical examination is negative. I myself do not feel that there is a pathologic pigmentation but that the patient has an antipathy toward diphenylhydantoin and seeks an excuse to discontinue it. Could either diphenylhydantoin sodium or Roux cause a disturbance of pigmentation? M.D., New York.

Answer.—A rapid survey of the literature does not reveal reports of increased pigmentation following the use of diphenylhydantoin sodium. Hyperpigmentation from the dye would probably follow an inflammation from an induced dermatitis venenata or contact dermatitis. If so, the dermatitis and postinflammatory pigmentation should have been present near the hair line and on adjacent parts besides those described as actually involved. Other causes for a dermatitis venenata too mild to be conspicuous may be present. Finger nail polish commonly affects the region of the eyelids, but the neck too is frequently an affected site. Chloasma may produce such hyperpigmentation. The color is brownish, unless the degree is intense. Then the hue is more blackish. The discoloration in this disorder is more apt to occur in poorly defined patches on the face. It accompanies usually, but not always, either pregnancy or inflammation in the pelvis. When neither one of the latter is present, the cause is difficult to find. So-called berlocq dermatitis may be the cause of the hyperpigmentation described in the query. This type of reaction occurs in some persons who become sensitized to ultraviolet rays after the use of essential oils, such as are present in cologne or perfumes. The sites at which these are applied are the ones which become hyperpigmented. A preliminary dermatitis may not precede the increased pigmentation or may be so mild as to escape attention. A condition called Riehl's melanosis may occur on exposed parts and was described as a war melanosis. Another disease probably the same as the war melanosis or similar to it is the poikiloderma of Civatte. In this the hyperpigmentation occurs on the sides of the neck and face. The discoloration is reticulated, or netlike. A more accurate description of the form and color of the increased pigmentation would be helpful in order to evaluate better some of the many possible causes of this discoloration.

CRACKS AND FISSURES OF THE NASAL VESTIBULE

To the Editor:—I have had several patients with a small crack inside the top of the nose. In at least 1 case a dermatologist was consulted. I have not had success in treating these cracks, which are extremely chronic or recurrent. Can you tell me anything of the etiology and treatment? F. L. R. Roberts, M.D., Spirit Lake, Iowa.

Answer.—The cracks or fissures described are to be considered as a form of dermatitis of the nasal vestibule and are accompanied by pain, redness, excoriation and crusting. The interior of the nose should be searched for the presence of undue secretion such as is seen in purulent sinusitis and allergic states. It is these states that are thought to be the underlying causes of the vestibulitis.

The treatment of the fissures themselves consists in applying silver nitrate solutions in varying strengths (5 to 20 per cent) and then following with applications of a mild ammoniated mercury ointment (2.5 to 5 per cent). Instead of silver nitrate, some advocate the use of stronger caustics such as trichloroacetic acid (50 to 90 per cent). Lastly the actual cautery may be tried in the more stubborn instances in which granulations have arisen on the borders of the fissures. The underlying sinusitis or allergic state also should receive attention.

PRECOCIOUS PUBERTY

To the Editor:—Please send information on treatment for halting premature puberty. The girl is 5 years old with fairly well developed signs of puberty, pubic hair ½ to ¾ inch long, pointed breasts and shaped hips and legs. She has been having abdominal cramps at regular intervals for six months; no menses have been noted as yet. The father is normal. The mother menstruated at the age of 11. The mother had to take thyroid and pituitary during pregnancy. M.D., New York.

Answer.—Isosexual premature or precocious puberty in girls is usually the result of an ovarian tumor of the granulosa or theca cells or due to a constitutional condition in which there are no demonstrable organic changes. Usually the precocity from an ovarian tumor occurs about the ages 8 to 10, and rarely at the age of 5. If such a tumor can be ruled out through pelvic examination, diagnosis would then be constitutional premature puberty. Up to recent years no treatment for this condition has been recommended. However, it would seem quite likely that the administration of androgens such as testosterone propionate would be useful in controlling the abdominal cramps recurring each month as well as delaying other signs and symptoms of puberty. Such treatment should be attempted cautiously, since relatively little is known regarding the dosages of androgens in girls at this early age. It is suggested that 10 mg. of testosterone propionate might be administered at weekly intervals and increased slowly if there are no changes in the ovarian cycle. If this dosage is successful, the patient may be maintained on methyl testosterone orally, about 5 mg. daily. After several months of therapy a rest period should be instituted and treatment resumed on return of symptoms. Overdosage can be recognized by the appearance of acne, lowered voice and hirsutism, and treatment stopped if these appear. It can be started later at a lower level if necessary.

CARE OF BED PANS

To the Editor:—I would appreciate it if you will let me know whether there is any procedure or recognized system of washing or sterilizing bed pans each time they are used and after the patient leaves the hospital when that bed pan will be used by another patient. Oscar Gottfried, New York.

Answer.—In one large teaching hospital, bed pans are kept in a rack in the lavatory connected with the room where the patient is in a private room and cleaned as indicated. They are sterilized after the patient leaves the hospital. In the wards, bed pans are in a utility room. After use, the pan is cleaned, sterilized and replaced on the rack.

TUBERCLE BACILLI H 37RV

To the Editor:—Please tell me what is meant in tuberculosis study by strain H 37RV. H. H. Schultz, M.D., Ingleside, Neb.

Answer.—By H 37RV is meant a strain of tubercle bacilli of human type disassociated from the well known Saranac H 37 strain by William Steenken Jr., which grows in the form of rough colonies and has the virulence characteristic of a human type tubercle bacillus.

COLOSTRUM PREGNANCY TEST

To the Editor:—Can you give me an opinion concerning the reliability of the Falls-Freda technic for the skin test diagnosis of pregnancy as manufactured and distributed by the Sherman Laboratories of Detroit?

Paul J. Bronson, M.D., Terre Haute, Ind.

Answer.—According to the claims made for the Falls-Freda pregnancy test a diagnosis of pregnancy can be made following the intracutaneous injection of an extract of colostrum, a wheal indicating pregnancy, and its absence a negative test (Falls, F. H.; Freda, V. C., and Cohn, H. H.: *Am. J. Obst. & Gynec.* **41**:431 [March] 1941). These claims have not been confirmed by a number of investigators, including Weisman and Snyder (*ibid.* **42**:738 [Oct.] 1941). In spite of this lack of confirmation the advertising has induced many physicians to purchase the test for clinical use. No other skin tests for pregnancy have proved reliable in which either extracts of placenta or the urine of pregnant women is used. The biologic tests for pregnancy involving the use of rats, mice and rabbits are still the most practical and reliable.

FACIAL TIC

To the Editor:—A white man aged 43, a druggist, has had a facial tic for the past ten years in one side of the face involving the eye, the muscles of the face, the platysma and the occipital muscles. This tic is both clonic and tetanic in character, and the spasm occurs every ten minutes and lasts about three minutes. The spasm starts with clonic contractions and gradually goes into the tetanic type, shutting the eye completely for a minute. The patient has no pain with this tic. He is intelligent and has no neurotic background. The eyes, ears and nose are essentially normal. He was treated for frontal sinusitis on several occasions. A nose and throat physician took an x-ray of the sinuses eight years ago and the report read "left sphenoid and posterior ethmoiditis; polyp, moderate size, in right antrum." He is in good health. A Hinton test is negative for syphilis. A neurologist was consulted, and he advised cutting the facial nerve, using the spinal accessory nerve to get impulses through the peripheral fibers and suspending the face with fascia so that the loss of the facial nerve would be completely disguised. The patient refused to have the facial nerve cut. What is the latest procedure in treating such a tic? Will a nerve crushing or stretching help? How about alcohol injections? Will any medicine alleviate, at least temporarily, facial tics? Should neostigmine be tried in this case?

M.D., Massachusetts.

Answer.—This is the description of a typical and severe hemifacial spasm. The cause of the condition is not clear, but it seems most likely that it results from some irritation of the facial nucleus in the brain stem. In the milder cases sedatives may prove of some benefit, but in the main medical treatment in all forms has been disappointing. Any procedure which interrupts the function of the facial nerve such as cutting the nerve, crushing it or injecting alcohol will stop the spasm. However, all of these cases entail a facial paralysis of varying degrees of permanence involving sections of the facial nerve, and anastomosis with the spinal accessory nerve would seem to be the procedure of choice. But as the patient refuses to have the nerve cut all of these operations would seem to be excluded. In any event none should be undertaken until after the nerve has been temporarily paralyzed with procaine so that the patient may be fully aware of the nature of the facial paralysis.

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Ehni, George, and Woltman, H. W.: Hemifacial Spasm, *Arch. Neurol. & Psychiat.* **53**:205 (March) 1945.

Coleman, C. C.: Surgical Treatment of Facial Spasm, *Ann. Surg.* **105**:647 (May) 1937.

GOGGLES FOR UNDERWATER SWIMMING

To the Editor:—I am anxious to get a treatment for a pair of special lenses for eye glasses. This idea is that I enjoy under water swimming and would take even more pleasure in it if it was possible for the normal human eye to focus when a watery medium is in contact with the cornea. Unfortunately, it can't be done; and furthermore the ophthalmologists whom I happened to consult couldn't compute a treatment for the lenses. I have no visual defect and so the only consideration would be what convexity needs to be put up to accommodate for the diminished refraction when the eyes are immersed. Perhaps the question How far in front of the corneas should the lenses be placed? needs to be answered. I am not interested in contact lenses if ordinary spectacles can do the job.

Glenn J. Potter, M.D., Los Angeles.

Answer.—There is no treatment that can be applied to lenses that would in any way change the refraction of the glass, which answers the first sentence of the inquiry. Contact lenses certainly would not alter the ability to see under water. The only possibility is that a pair of goggles could be used under water which are more or less of a protection against eye infections and irritation due to continual or long periods of swimming. Such a goggle may be obtained from Abercrombie and Fitch, which is in the form of a rubber goggle fitting snugly so as to eliminate water coming in contact with the eyes.

PAINS IN THIGHS WITH LYMPHADENOPATHY

To the Editor:—A white married woman aged 23 complains of severe aching and cramping pain in both thighs while at work. She is a beauty operator and has been working quite hard, and part of the time she may be standing quite still for some minutes, when the pain becomes worse. On examination there are no varicose veins and no obesity (weight 120 pounds, or 54 Kg.). There are several palpable tender lymph glands in the popliteal space and extending up the posterior side of the thigh. There is no lesion of the skin where infection might have gained entrance. There is a mild endocervicitis. The rest of the examination is essentially negative. I am unable to account for the pain. Can you suggest from these meager findings what might be the probable diagnosis or what other examination might reveal the diagnosis? M.D., Washington.

Answer.—Any explanation of the symptom on the basis of the facts stated encounters some objection. The tender lymph glands in the popliteal space must mean infection below this level unless there is generalized lymphadenopathy, which the correspondent has not reported. In any event the infection which would produce these glands must lie below the level of the thigh. The same objection must be raised against a possible circulatory obstruction. Any circulatory obstruction in the pelvis, where it must be to produce bilateral pain, would produce pain below the level of the thigh. Aching and cramping pain brought on by work is suggestive of a circulatory deficiency, and in spite of the lack of pain in the lower part of the leg it might be worth while to test the circulation by means of histamine flares or estimations of the skin temperature.

The other possibility that suggests itself is some involvement of the nerve supply. Again the bilateral distribution militates against such a possibility, but it is possible that a bilateral bony lesion such as an osteoarthritis (unusual in a patient of this age) might produce such symptoms. A lesion of the cauda equina or the conus medullaris must be considered, and a thorough neurologic examination is indicated.

Lastly the signs might be due to postural causes or to a congenital deformity of the lower lumbar spine. This also should be disclosed by x-ray examination.

TRAUMA AND HEART DISEASE

To the Editor:—A recent case in which I am interested, involved an award made by a workmen's compensation court to a petitioner who suffered a strain on the left side while operating a motor truck. In attempting to steer the vehicle he was driving around a sharp turn, it was necessary for him to brace one leg against the instrument panel board of the truck and then exert his strength to turn the vehicle. The man had suffered from a hydrocele for six years, and in visiting a doctor four hours after the incident his complaints were of pains radiating from the scrotum to the upper part of the abdomen. (Incidentally, he made the same turn three additional times within four hours.) Ten days after the occurrence he was operated on for repair of the hydrocele, and after three months' rest he resumed his employment as a truck driver but had to discontinue the work, owing to his physical condition becoming weakened. At the compensation trial, physicians testifying in his behalf stated that the man was really suffering from an endocarditis and in their opinions the strain aggravated a condition which would have remained quiescent. Their estimate of the disability due to trauma aggravating a preexisting condition was 50 per cent of total, which award was made by the compensation commissioner. Discussion of the case with fellow physicians convinces me that my opinion was correct in that there could not have been an aggravation of endocarditis from the strain and, had the heart been affected from the effort, immediate prostration or intense discomfort would have developed.

M.D., New Jersey.

Answer.—In the absence of cardiac symptoms per se, namely precordial pain, dyspnea and severe palpitation, there is no clear basis for the opinion that the physical strain in this case aggravated "heart disease with endocarditis." Generalized abdominal pains and weakness are not cardiac symptoms. If there had been a high degree of valvular involvement of rheumatic or syphilitic origin, it is possible that severe physical strain might have caused the myocardium to fail or even might have produced, as it rarely does, rupture of a valve cusp or of the chordae tendineae; but there is no evidence that such occurrences took place here. It is uncommon for an endocarditis to follow simple physical strain.

CONTRACEPTION SIX YEARS AFTER MENOPAUSE

To the Editor:—I have been asked the question "Is there need for contraceptive measures to be taken by a woman aged 57 who has not menstruated during the past six years? Without such measures what are the chances of her becoming pregnant?" M.D., New York.

Answer.—There is no need for such a patient to use contraceptive measures because a pregnancy is out of the question. As far as is known there is no case on record of a gestation having occurred under these circumstances.

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PRINCIPLES IN THE MANAGEMENT OF EXTERNAL FECAL FISTULAS

CLAUDE F. DIXON, M.D.
and
RAYMOND E. BENSON, M.D.
First Assistant in Surgery, Mayo Clinic
Rochester, Minn.

Fecal fistulas are fairly frequently encountered by those engaged in the practice of surgery. Usually they arise as an unexpected and distressing complication of abdominal operations. Sometimes they heal spontaneously and all that is required of the surgeon is "masterly inactivity." The eradication of others, however, may be an extremely difficult task—one that will tax the skill of the most resourceful operator. There are certain well founded principles which may be used as a guide in the treatment of fecal fistulas and which may expedite the task of the physician and the recovery of the patient. To ignore these rules is often to invite poor results or disaster and, as many of them have not been clearly elucidated before, we will set them forth in the following paragraphs.

The few statistical deductions of this report are based on an analysis of data on 65 consecutive cases of persistent external fecal fistulas in which the patients were surgically treated by the senior author in the period from January 1942 to December 1944 inclusive. Mayo and Schlicke[1] and Lichtman and McDonald[2] have reported data on the cases observed at the Mayo Clinic prior to 1942.

Fecal fistulas may be classified as internal or external. In the former group there is no communication with the body surface, the fistula being an abnormal communication between two hollow viscera. This study is not concerned with internal fecal fistulas except as they are found in association with the external type. External fistulas are those which terminate on the body surface. Such fistulas may have their origin in any of the hollow abdominal viscera, but the present review is confined to a group known as external fecal fistulas. The term "fecal" connotes origin from that portion of the gastrointestinal tract in which the contents have the characteristics of feces. Such fistulas arise from the distal portion of the ileum and from the colon, the jejunum and the duodenum being excluded. Most of the external fecal fistulas of the present series terminated on the abdominal wall, but in occasional instances the external orifice was found in the lumbar, sacral, gluteal or thoracic areas or on other portions of the body surface.

The great majority of the fistulas in this series had as their point of origin the ileum, cecum or sigmoid. This fact is explained by the frequent predilection for these regions of chronic granulomatous disease processes such as regional enteritis and perforating diverticulitis.

Spontaneous fecal fistulas which arise without any antecedent surgical intervention are uncommon. Only 2 such cases were found in this series. In 63 (97 per cent) the fistula followed some type of operative procedure. In a few the original operation had been performed several to many months prior to the advent of the fistula and for a condition which could not have been etiologically related. The 63 postoperative fistulas were all accidentally produced. Cases in which enterostomy or colostomy was performed or other types of enteric stomas were intentionally produced are not included here, our observations regarding the surgical management of these having been recorded elsewhere.[3]

THE AVOIDANCE OF EARLY OPERATION

It is almost universally wrong to attempt to repair an external fecal fistula surgically shortly after its inception. Better results will be obtained if a period of waiting and conservative treatment is indulged in first. Delayed operation is usually not advisable in cases of fresh, penetrating gunshot or stab wounds of the abdomen. If, however, a person who has sustained a penetrating abdominal injury is not seen for many hours or several days after the injury and a fecal fistula has developed, it is best not to attempt to repair the fistula immediately. Other conditions may be present which will require early surgical intervention, but the fistula per se is best left alone. This is likewise true for postoperative fecal fistulas and those which arise spontaneously.

There are several reasons for this. The fact that an external fistula exists usually indicates that the perforation in the bowel which is the point of origin and the fistulous tract are well "walled off" from the general peritoneal cavity by plastic exudate, adhesions, omentum, intestinal loops and other intra-abdominal structures. The danger of spreading, generalized peritonitis is not great. Early in the course of a fecal fistula there is an acute perifistulous inflammatory reaction which involves all the structures which surround the tract. Attempts at repair during this acute inflammatory stage break down the surrounding protective zone of adhesions and omentum, spread the infection and may result in generalized peritonitis and death. It should also be noted that during the early stages the surrounding edema, infection and inflammatory reaction so obliterate the normal landmarks that dissection of the fistulous tracts and recognition and mobilization of the affected segments of bowel are extremely difficult. Even if the

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From the Division of Surgery, Mayo Clinic.

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[1] Mayo, C. W., and Schlicke, C. P.: The Surgical Management of Fecal Fistulae, Ann. Surg. **114:** 1011-1017 (Dec.) 1941.

[2] Lichtman, A. L., and McDonald, J. R.: Fecal Fistula, Surg., Gynec. & Obst. **78:** 449-470 (May) 1944.

[3] Dixon, C. F., and Benson, R. E.: Closure of Colonic Stoma: Improved Results with Combined Succinylsulfathiazole and Sulfathiazole Therapy, Ann. Surg. **120:** 562-571 (Oct.) 1944.

dissection can be carried out successfully, it is often found that the intestinal wall for a considerable distance proximal and distal to the point of origin of the false opening is edematous, friable and inflamed. Suturing of such intestine is difficult and unsatisfactory, for often the sutures will not hold, the line of closure will separate and the fistula will recur.

Early operation for external fecal fistula is not only fraught with danger and usually unsatisfactory; it is, in addition, often entirely unnecessary. Many external fecal fistulas will close spontaneously with no treatment other than the application of simple conservative measures. Early operation to eliminate the fistula often merely adds insult to the injury already sustained. In 39 per cent of the cases in Deaver's [4] series the fistula closed spontaneously, and in Ray's [5] experience operative procedures were not required in 10 of 11 cases (91 per cent) of fecal fistula following appendectomy. Others [6] have recorded a similar experience.

THE NATURE AND METHODS OF CONSERVATIVE TREATMENT

In the early stages of formation of a fecal fistula there are usually considerable irritation and local inflammation of the peritoneum. In consequence of this, varying degrees of paralytic ileus develop and abdominal distention, constipation, localized abdominal tenderness, vomiting and fever will ensue. The abdominal distention may be contributed to by a subacute mechanical obstruction from the inflammatory mass which surrounds the injured portion of the bowel. Treatment during this phase is best carried out by instituting continuous transnasal intestinal suction, warm applications to the affected area, withholding of food and liquid nourishment and provision of adequate parenterally administered fluid, solution of glucose, and saline and vitamin replacement therapy. Intravenously administered sulfonamide compounds may also be of value, and for this purpose the sodium salt of sulfadiazine may be appropriately used. Infection in the wound is an invariable accompaniment of formation of fecal fistula. Disruption of the wound may occur and, to obviate this, complete rest in bed should be insisted on and the abdominal wall should be reinforced with broad strips of strong adhesive tape and an abdominal binder. Blood transfusions are often of value as a supportive measure and to combat secondary anemia.

In a few to several days the fever and ileus usually subside, general improvement occurs and the subacute stage of the fistula commences. Intestinal drainage can now be discontinued and the peroral intake of fluids and food gradually and cautiously increased. Considerable amounts of purulent material and feces may drain from the wound. Parenterally administered sulfonamide compounds can be dispensed with and other types of treatment instituted. Efforts now are directed toward eliminating the residual perifistulous inflammation, decreasing the passage of intestinal contents through the fistula and improving the patient's general condition. The local application of heat in the form of warm, moist dressings or more intensively by means of diathermy may well be continued, for the value of heat in hastening the resolution of inflammatory processes has often been demonstrated. The infectious nature of the feces can be reduced by the administration of succinylsulfathiazole by mouth. Unfortunately, however, this drug often causes the feces to become liquid. The liquid feces drain readily through the fistulous opening and may result in great excoriation of the skin unless special precautions are taken. To make the intestinal contents more solid, camphorated tincture of opium or bismuth preparations are commonly employed, but probably better for this purpose is one of the psyllium seed products, which absorb intestinal water.

The problem of prevention and treatment of excoriation and erosion of the skin and abdominal wall by fistulous discharges is especially great when the intestinal contents so evacuated come from the ileum and upper segments of the small intestine. For these purposes many ingenious types of pastes, salves, suction appliances and plugs of various sorts have been devised to protect the skin and abdominal wall. In our experience the best results have been obtained with the local application of aluminum paste or, in occasional cases, kaolin paste. The latter substance can be built up around the opening of the fistula to form a cuplike receptacle which collects the dejecta from the fistula and does not allow them to come in contact with the skin.[7] Continuous catheter suction using an electrical suction device will remove the discharges immediately and may often be of benefit. When the skin is soft and macerated, the drying effect obtained by exposing the wound and applying mild, dry heat as obtained from an ordinary electrically lighted hood will often be of aid. In those instances in which excoriation of the skin is especially severe, it is sometimes wise to place the patient in the prone position on a Bradford frame for a few days in such a posture that the external opening of the fistula is in the most dependent position.[8] An opening through the frame permits drainage to take place into a container placed beneath the patient, and soiling of the skin and surrounding tissues is completely prevented.

Chewing gum and various plugs and buttons have all been suggested at one time or another as a means of occluding the fistulous opening. Successes in obtaining spontaneous closure have been obtained with each of these, but in general they are of very limited value. Fecal fistulas heal by contracture of scar tissue and consequent obliteration of the lumen, and it would seem, at least in some instances, that the insertion of a foreign body into the tract would serve simply to prevent the desired contracture and healing. A more universally applicable way of decreasing the flow of excreta from a fistula is by increasing the consistency of the feces and insuring that the bowel distal to the origin of the fistula is patent.

If after twelve weeks to six months of conservative treatment the fistula still persists and no further progress toward spontaneous closure is demonstrable, it must be classified as a late chronic or persistent fecal fistula and the line of therapy must be again altered.

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[4] Deaver, J. B.: External Fecal Fistula Following Appendicitis, Ann. Surg. **83:** 782-789 (June) 1926.

[5] Ray, B. S.: A Study of Appendicitis: 1,500 Cases at the New York Hospital, New York State J. Med. **38:** 412-423 (March 15) 1938.

[6] Duley, Wade: Acute Appendicitis: An Analysis of 417 Consecutive Cases, Am. J. Surg. **58:** 40-47 (Oct.) 1942. Gibson, C. L., and Sherrill, W. P.: Prophylaxis of Fecal Fistula in Operations for Acute Appendicitis, Am. J. Surg. **40:** 7-9 (Jan.) 1926. McLaren, Archibald: The Closure of Fecal Fistulae, Journal-Lancet **38:** 185-189 (April 1) 1918.

[7] Dixon, C. F., and Deuterman, J. L.: The Management of External Intestinal Fistulas, J. A. M. A. **111:** 2095-2100 (Dec. 3) 1938.

[8] Potter, E. B.: Intestinal Fistulae: A Method for Preventing Digestion of the Skin, Ann. Surg. **95:** 700-703 (May) 1932.

THE MANAGEMENT OF PERSISTENT FECAL FISTULAS

The Determination of Etiologic Factors and the Site of Origin.—Just as there is a primary cause for all fecal fistulas, there is likewise a cause for their persistence. Nature is kind and will gradually resorb the products of inflammation and eliminate most fistulas unless insurmountable obstacles exist. In some instances the primary cause and the reason for persistence of the fistula are not the same. A recently observed case illustrated this. The primary cause of the fistula was trauma to the cecum during appendectomy. Persistence of the fistula was, however, apparently due to retained foreign bodies (steel surgical needle and cotton fibers) in the tissues of the abdominal wall. In other instances the primary and secondary factors are the same. This is exemplified by instances of diverticulitis with fistula formation. In these the original perforation in the bowel is due to diverticulitis, and the persistent fecal fistula is also often attributable to continued peridiverticular inflammation and disease of the intestine.

In all cases of fecal fistula the efforts of the physician should be directed toward determination of the cause of the fecal drainage as soon as the patient's condition permits the necessary examinations. As nearly as could be determined, the factor responsible for persistence of the fistula in the 65 cases of this series was as follows: Continued fecal drainage is in many cases attributable to primary disease of the intestine. In this group are included diverticulitis (12 cases), regional enteritis (12 cases), intestinal cancer (7 cases), chronic ulcerative colitis (5 cases), tuberculous[9] enteritis (2 cases) and actinomycosis (2 cases). In other instances the primary disease is not in the intestine but within the peritoneum or adjacent structures. In this classification are included pelvic inflammatory disease (5 cases), pelvic inflammatory disease with associated osteomyelitis (1 case), tuberculous[9] abscess, primary focus extraintestinal (1 case), retained foreign bodies with osteomyelitis (1 case) and osteomyelitis (1 case). The last group of fecal fistulas is composed of those the persistence of which is attributable to pathologic conditions within the fistulous tract itself or in the abdominal wall. There were 5 cases in which the contraction of scar tissue incident to attempts at healing of the fistula resulted in encroachment on the lumen of the bowel at the site of origin of the false communication to such an extent that mechanical factors prevented healing of the tract. In 2 cases recognizable and removable foreign bodies were encountered in the tract or abdominal wall.

There remains a group of 9 cases in which no clinical or pathologic evidence (using ordinary methods) of the cause of the fistula could be determined. The studies of Feinberg,[10] German[11] and Lichtman and McDonald[2] have given a clue as to the possible cause in this group. These investigators have found talc, cotton fibers, lycopodium granules and other minute foreign bodies in intra-abdominal granulomas and fistulous tracts. It may well be that such particulate foreign material was responsible for the persistence of many of the fistulas classified here as indeterminate. It is also possible that in many of the other cases a multiplicity of etiologic factors were present. The grouping here includes only the one most important factor for each case. In many instances there may have been in addition to the primary factor other causes such as retained particulate matter which contributed to the persistence of the fistula.

Careful general examination should always be performed and roentgenograms of the affected regions should be searched for radiopaque foreign bodies. When the fistula arises in the lower left portion of the colon, proctoscopy may afford valuable information. Careful inspection and examination of the fistulous opening and surrounding area and microscopic examination and culture of the discharge from the fistula are of paramount importance. The characteristic "sulfur bodies" of actinomycosis should always be sought and in occasional instances special examinations for other fungi, tubercle bacilli and pathogenic amebas are in order. The most valuable preoperative test, however, is the roentgenographic examination of the intestine following the administration of barium. By this means disease of the bowel can be recognized and in many instances the site of origin of the fistula can be determined. In some cases injection of a radiopaque liquid into the fistulous tract followed by roentgenograms will give information as to the origin, length and ramifications of the tract.

The Determination of Patency of the Bowel Distal to the Fistula.—It is foolish to attempt to close a fistula if the bowel distal to the point of origin is subacutely or completely obstructed. Intestinal obstruction will certainly result, and recurrence of the fistula will surely follow. When an obstruction is found in the bowel distal to the point of origin of a fistula, this must first be relieved. If this is done the fistula will often heal spontaneously, for in this type of case fistulas often depend for their continued existence on increased intraluminal pressure in the bowel secondary to obstruction.

Essentials in the Preoperative Care of Persons Who Are to Undergo Surgical Treatment for External Fecal Fistulas.—Before making a direct surgical attack on a fecal fistula it is apparent from the foregoing discussion that several conditions should, if possible, be met. The first requisite is to determine the cause of the persistent fecal fistula; the second, to know from what segment of the intestine the false communications have their origin. The third requisite is the determination of the patency of the bowel distal to the fistula and, fourth, an adequate trial at conservative management should have been made.

There are several other conditions which it is desirable to meet before instituting definitive surgical treatment. The general condition of the patient should be improved as much as possible. Persons who have persistent external fecal fistulas are often debilitated, weak, anemic and undernourished. It is not amiss to hospitalize a patient for several weeks of preoperative preparation. The nutritional status can be improved with a high caloric, high protein diet. Appropriate medications and blood transfusions will correct anemia when it exists. When derangements of electrolyte balance are present, they should be corrected and vitamins should be given in amounts sufficient to overcome any tendency toward deficiency.

It must next be determined that all evidences of acute inflammation around the fistulous tract and in the abdominal wall have subsided. If such is not the case, conservative measures as previously outlined may be continued for a while longer.

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[9] Histologic diagnosis only.

[10] Feinberg, Robert: Talcum Powder Granuloma, Arch. Path. **24:** 36-42 (July) 1937.

[11] German, W. M.: Dusting Powder Granulomas Following Surgery, Surg., Gynec. & Obst. **76:** 501-507 (April) 1943.

For at least three days and preferably for five to six days before operation succinylsulfathiazole should be administered in adequate doses. The usual procedure is to give 4 Gm. of this drug every four hours for the first twenty-four hours and 2 Gm. every four hours thereafter. The last dose is given approximately six hours before the time of operation. For three to four days before operation a high carbohydrate, very low residue type of diet, gentle catharsis with a saline laxative and repeated saline enemas are employed to reduce the amount of retained fecal material. During the twenty-four hours immediately preceding operation enemas and laxatives are discontinued, 2 fluidrachms (7 cc.) of camphorated tincture of opium is given every four hours and aspirations of the rectum are performed.

If the patient can meet all the foregoing requirements and is properly prepared, the surgeon will often choose to make a direct attack and resect the fistula and underlying diseased parts, for by so doing the best chances for an early and permanent cure are obtained. Certain circumstances will alter the plan, however, and experience may indicate the preferability of conservative surgical procedures.

The Types of, and Indications for, Conservative Surgical Treatment, Curettage of the Fistulous Tract.—If after an adequate trial of conservative medical management all evidences of active inflammation about the tract have subsided, fecal drainage is minimal or almost entirely absent and no significant disease of the intestine or perifistulous structures can be demonstrated, simple curettage will remove any epithelial lining of the tract and may stimulate healing sufficiently to cause closure of the fistula. It is occasionally successful. Cases in which treatment was by curettage were considered nonsurgical and not included in the present series.

Short-Circuiting or Sidetracking Procedures: Short-circuiting or sidetracking procedures are a very valuable form of treatment for persons who have persistent external fecal fistula. In general they serve the purpose of aiding patients who cannot meet the conditions essential to a direct attack on the fistula. They are useful as a preliminary procedure for those in whom a persistent acute or subacute inflammatory reaction in the intestine and about the fistula will not subside with the conservative medical treatment, for diversion of the fecal stream will aid resolution of the inflammatory process. They are also useful for those whose general condition is so poor that a more extensive operation would be unduly hazardous. A preliminary short-circuiting procedure may allow a striking improvement in general health. Short-circuiting procedures are also used as a palliative procedure in cases of large, perforating, inoperable cancers of the intestine in which an external fecal fistula has formed. Occasionally a short-circuiting procedure will turn out to be a form of definitive treatment and will result in complete subsidence of the fistula.

The purpose of short-circuiting and sidetracking procedures is to divert the fecal stream from the segment of intestine which gives origin to the fistula. When the fistula originates in the terminal portion of the ileum, the cecum, the ascending colon or the hepatic flexure, this can be accomplished by ileocolostomy. The abdominal incision for this operation should be made at a distance from the infected region around the fistula.[12] Two types of ileocolostomy are commonly employed. In the exclusion type the ileum is transected proximal to the diseased region, the distal end is inverted and the proximal end is anastomosed to the colon at a point distal to the diseased region (usually to the transverse colon). The side to side type of anastomosis is preferable, but end to side union may also be employed. In the ordinary type of ileocolostomy (ileocolostomy in continuity) the ileum is not divided. A simple side to side anastomosis is effected between a segment of ileum above the diseased region and the colon distal to the involvement.

What results can be expected from these procedures? In the occasional case in which there is no disease in the underlying bowel, spontaneous subsidence of the fistula will result and no other treatment will be necessary. When the fistula arises from a segment of ileum or cecum which is the site of regional or tuberculous enteritis or chronic ulcerative colitis of the regional type, a sidetracking procedure is usually not curative. Its main advantage has been, in the experience of the senior author, that it aids in improving the patient's general condition and makes the necessary resection less formidable by dividing it into stages. This point is, however, strongly contested by some[13] who feel that regional enteritis with fistulas will heal completely with the performance of an exclusion type of ileocolostomy alone. Further study will be required to settle the point.

Ileostomy is a type of sidetracking operation which is the procedure of choice in the treatment of persons who have external fecal fistulas arising from chronic ulcerative colitis of the rectum, sigmoid or entire colon. It does not eliminate the fistulas, but by diverting the fecal stream from the diseased large intestine it reduces the amount of irritating discharge from the fistulas and great improvement in the patient's general health may accrue. Second stage resection of the diseased segments, usually the entire colon, is necessary to eradicate the fistulas and the disease.

When the fistulas arise from the left portion of the colon, proximal colostomy may be used as a sidetracking procedure when activity of the disease or the patient's condition does not permit primary resection. The stoma should be placed far proximal to the diseased region so that, if resection is later undertaken, the stoma will not interfere with mobilization of the left portion of the colon. Colonic stomas are easily and conveniently established in the transverse colon, and this site is preferred whenever possible. Perforating diverticulitis with external fecal fistulas deserves especial mention here. In this disease the conditions necessary to permit a primary resection of the fistulas and diseased bowel can seldom be met without the performance of a preliminary short-circuiting procedure (transverse colostomy). Diverticulitis produces a very acute, phlegmonous and indurated inflammatory reaction which is very slow to subside. Even after the fecal stream has been diverted, conservative measures must be employed for at least three months, and often it is six months or one year before the inflammatory reaction has subsided sufficiently to enable the surgeon to proceed with resection.

Methods of Resection in the Treatment of Persistent External Fecal Fistulas.—The Type of Incision: The incision should encircle and excise the fistulous tract

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[12] Keyes, E. L.: Further Experience with the Exclusion Operation for the Treatment of Fistula of the Small *Intestine,* South. M. J. **35**: *832-837 (Sept.) 1942.*

[13] Garlock, J. H., and Crohn, B. B.: An Appraisal of the Results of Surgery in Treatment of Regional Ileitis, J. A. M. A. **127**: *205-208 (Jan. 27) 1945.*

(fig. 1). Lockhart-Mummery[14] has advocated a remote incision made through a clean field at a distance from the external opening of the fistula, but there are several disadvantages to this. In the former type the openings of the fistula are encircled by a purse string suture before the incision is made, and if care is taken not to incise the tract accidentally during the dissection there is little contamination. In the remote type of incision the tract must be transected from the inside at the level of the peritoneum. This leaves intact the segment of the tract which traverses the layers of the abdominal wall. The infected contents of this portion of the fistula may spill into the peritoneal cavity. Other objections to the remote incision are that the raw surface left after the fistula has been dissected free from the abdominal wall must be reperitonealized from the inside This task is often difficult when the incision is remote, but it is accomplished easily with the routine closure of the abdominal wall when the original incision encircles the fistulous tract With the remote incision it is advisable at the conclusion of the operation to excise the portion of the tract left in the abdominal wall and the surrounding diseased tissues This procedure is accomplished more satisfactorily at the time of the initial incision

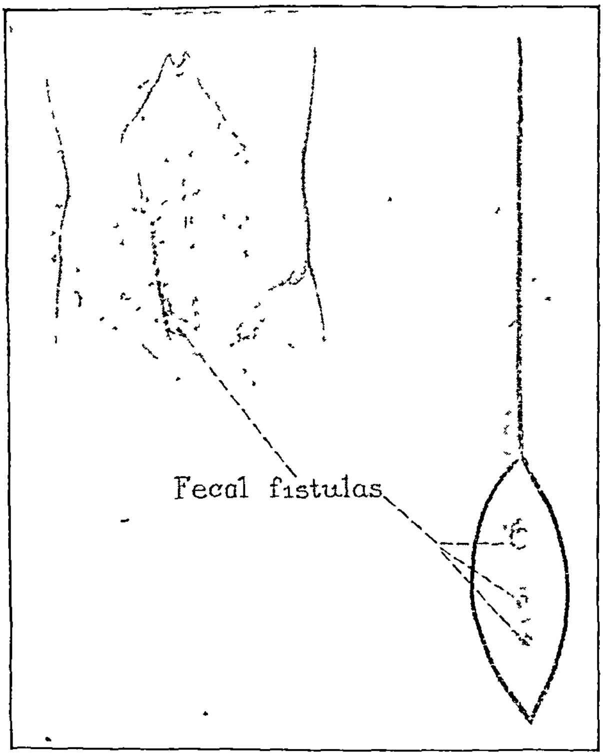

Fig 1—Left, three fistulous openings in lower end of right paramedian scar Right, the incision (indicated by solid line) encircles and excises the fistulas

In some cases the external openings of the fistula will be in the gluteal, lumbar, sacral or thoracic region or in such a position on the abdominal wall that they cannot be included in the incision. For these there is no alternative to the use of a remote incision. In other cases in which there are multiple, widely separated openings all of which cannot be included in the incision, the remaining tracts must be dissected free from the intraperitoneal aspect.

Mobilization and Inspection of the Intestine: Coffey[15] and others have discussed extraperitoneal procedures in the surgical treatment of external fecal fistulas. These have a field of usefulness in the elimination of colonic or enteric stomas or the occasional accidentally produced fistula in which the skin and mucous membrane of the bowel are close together or in continuity. In the great majority of cases of persistent fecal fistula, however, and in all cases in which disease of the underlying intestine is suspected or known to be present, the peritoneum should be opened and the intestine mobilized so that it can be thoroughly examined by direct inspection (fig. 2). With proper precautions against contamination the danger of peritonitis is minimal, for the peritoneum has been well vaccinated against the pathogenic organisms present and the use of the sulfonamide compounds affords extra protection.

The Extent of the Resection: All diseased tissue must be removed. This includes not only the fistulous tract and the surrounding infected tissues of the abdominal wall but all the diseased bowel and other infected and useless intraperitoneal structures (fig. 3). In some cases it will be found on inspection that no significant disease of the intestine is present. For these cases simple resection of the fistulous tract, excision of a small rim of normal intestinal wall around the origin of the tract and closure of the opening are all that it is necessary to do In other cases there is a scar tissue contracture of the bowel at the site of the origin of the fistula, and after excision of the tract a small plastic procedure will be necessary to maintain an adequate intestinal lumen. These two types of procedures were performed eighteen times in the present series.

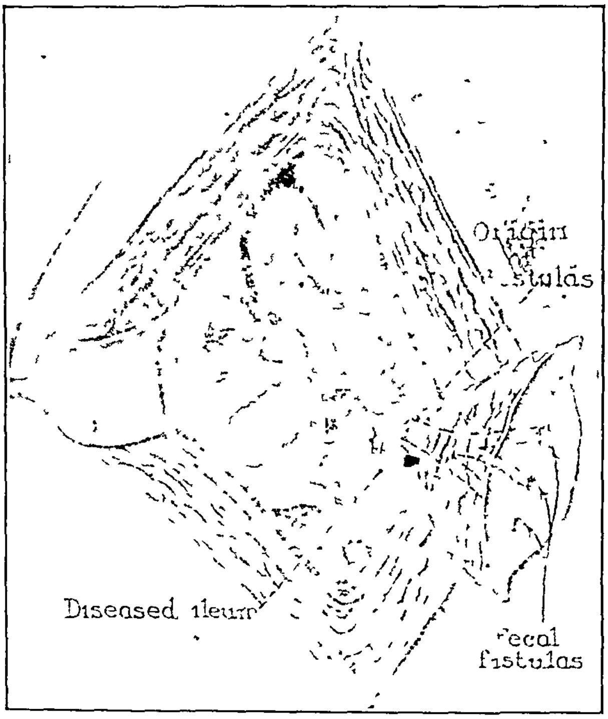

Fig 2—The peritoneum is opened and the bowel is mobilized, revealing the origin of the fistulas from a diseased terminal ileum

In the majority of cases of this series (35 cases) disease of the underlying intestinal loops was demonstrable and resection was undertaken. In 21 cases resection of varying lengths of ileum and the right side of the colon was necessary. This type of operation is usually performed in one stage (19 of 21 cases), intestinal continuity being regained by simultaneous side to side ileocolostomy. There were 9 resections of portions of the left side of the colon. All of these operations were performed in multiple stages as extraperitoneal resections with subsequent closure of the resulting colonic stoma or with a preliminary sidetracking operation followed by resection. In 1 case primary disease of the ileum (regional enteritis) had perforated into and involved the sigmoid colon. In another instance a primary carcinoma of the sigmoid, in addition to forming an external fecal fistula, had secondarily involved the ileum extensively. In both of these cases double resection of sigmoid and ileum was performed. In 3 cases the underlying disease and resulting fistulas were so extensive that removal of almost the entire colon, leaving only the rectum and lower part of the sigmoid, was necessary.

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[14] Lockhart-Mummery, P.: Methods of Closing Fecal Fistulae, Surg., Gynec. & Obst. 29: 312-314 (Sept.) 1919

[15] Coffey, R C Remote or Indirect Subperitoneal Drainage in the Extraperitoneal Closure of Persistent Fecal Fistulae, Ann. Surg. 45: 827-835 (June) 1907

In 13 cases one or more internal fistulas were found coexistent with the external communication. When this situation is encountered, the internal fistula must be resected also in order to effect a cure. In 10 cases enteroenteric fistulas were found. In some instances these were undoubtedly of benefit to the patient while the disease process was still present, for they represented spontaneous short circuits around diseased and obstructed segments of intestine. Enterovesical fistulas were encountered in association with external fecal fistula 2 times. For these, in addition to resection of the fistula and diseased bowel, it is necessary to excise the communication between the bowel and the urinary bladder. In a previous report we discussed the management of such cases and indicated the desirability of temporary suprapubic cystostomy when resections of the bowel and the bladder are performed simultaneously.[16] In 1 additional case external fecal and enterovaginal fistulas coexisted.

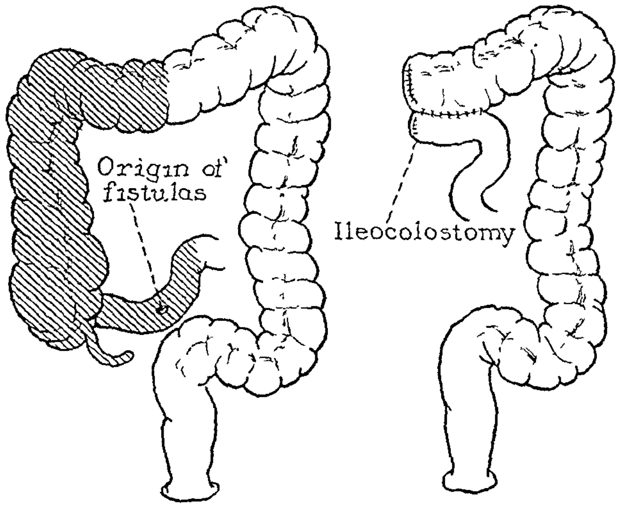

Fig. 3.—Left, shaded area indicates amount of bowel to be resected Right, intestinal continuity regained by ileotransverse colostomy (side to side).

At the conclusion of the operation 5 Gm. of sulfathiazole or sulfanilamide is dusted intraperitoneally and a small additional amount is sprinkled in the incision. It is also often advisable to insert a soft rubber intraperitoneal drain.

Postoperative Care.—Whenever there is a suture line in the intestine which is not protected by a proximal colonic stoma or other type of artificial vent, the bowel should be kept well decompressed by transnasal intestinal suction for the first four to five postoperative days. If at the end of this time the patient tolerates having the tube clamped without distress, it may be removed and the peroral administration of fluids and food gradually increased.

As an additional prophylactic measure against infection, parenteral sulfonamide therapy may be employed. It has been our practice to administer slowly 5 Gm. of sodium sulfadiazine diluted in 2,000 cc. of isotonic solution of sodium chloride subcutaneously, starting twenty-four hours after the operation. In this manner a concentration of sulfonamide compound in the blood adequate for prophylactic purposes is maintained by the use of minimal amounts of the drug.

In an occasional case the region of the external opening of the fistula will be surrounded by many other old surgical incisions and extensive scarring. In such instances it may be necessary to sacrifice considerable skin and subcutaneous tissue. As a result there may be some tension on the skin suture line and, the blood supply to the region already being poor, some danger of necrosis exists. To obviate this, refrigeration of the wound by the continuous application of ice bags may be used. In several instances we have thought that the procedure was of definite benefit. It also frequently produces gratifying alleviation of pain in the incision.

The remainder of the postoperative treatment does not differ materially from that of the ordinary patient who has undergone an intestinal operation.

Special Considerations.—One of the types of persistent external fecal fistula in which treatment is difficult is that in which the patient is a woman and the original pathologic condition was pelvic inflammatory disease with pelvic peritonitis. Many loops of intestine may be firmly intricated in a mass of pelvic adhesions and large chronic tubo-ovarian abscesses and other inflammatory collections may be encountered. To dissect out the fistulous tract, release the intestine, remove the diseased tissue and restore some semblance of normality to the pelvis is indeed often a difficult task. Six such cases were encountered in the present series. For all cases of external fecal fistula, but especially those in which the primary pathologic change is pelvic inflammatory disease or diverticulitis of the sigmoid with perforation, the importance of prolonged conservative treatment until all evidences of acute inflammation have subsided cannot be stressed too much.

External fecal fistulas which pass through bone are extremely refractory to treatment. The difficulty lies in fulfilling the principle of removing all diseased tissue. Not only are the removable soft tissues involved but bony structures are infected as well (osteomyelitis) and these can seldom be completely extirpated. Our usual procedure has been to dissect out the tract, transect it at the point of entrance into bone, remove all diseased soft tissues and thoroughly curet the osteomyelitic tract, removing all possible sequestrums. A preliminary or simultaneous proximal artificial stoma is established to defunctionalize the segment of intestine on which operation is performed. After many weeks or months the stoma may be closed and intestinal continuity reestablished. Even with the most elaborate precautions, however, poor results are common. The mechanism of recurrence of the fistula seems to lie in the development of an abscess between the proximal end of the osteomyelitic tract and the intestine. This ruptures into the bowel and the bony tract to reestablish the fistula. Three such cases are included in the present series. In 2 of these preoperative and postoperative penicillin therapy seemed to be of some value.

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Enteroabdominal actinomycosis with formation of external fecal fistula is ordinarily not amenable to surgical treatment. When the disease is so extensive that fistulas have formed, it is virtually impossible to eradicate it completely by surgical methods and recurrence is prompt. In 2 cases included in the present series of 65 cases in which treatment was surgical, incision and drainage of intra-abdominal abscesses only were performed. One of the patients showed no improvement with penicillin therapy; the second has shown some improvement but after months of intermittent therapy with penicillin still has active disease. A third nonsurgical patient, not included in the present series, who had a less advanced stage of the disease showed striking early improvement with intensive penicillin treatment, but insufficient time has elapsed to evaluate the final result.

MORTALITY

In the entire group of 65 cases there were two hospital deaths (3 per cent). One patient who underwent resection of the terminal ileum and right portion of the colon for extensive regional enteritis with multiple external and internal fecal fistulas died on the fourteenth postoperative day of thrombosis of the portal vein. The other patient died of widespread enteroabdominal actinomycosis. Surgical treatment in this case was limited to incision and drainage of abdominal abscesses.

SUMMARY

1. Early operation for the elimination of external fistulas is usually not advisable.
2. Many fistulas close spontaneously with conservative, nonsurgical treatment.
3. In the early, acute stages of formation of fecal fistula, treatment consists in transnasal intestinal suction, warm applications to the affected area and adequate parenteral fluid, solution of glucose, saline solution and vitamin replacement therapy. Parenterally administered sulfonamide compounds and blood transfusions may be of value.
4. In the subacute stage, efforts are directed toward eliminating the residual perifistulous inflammation, decreasing the passage of intestinal contents through the fistula and improving the patient's general condition.
5. Before instituting definitive surgical treatment for chronic, persistent fecal fistulas the following conditions should be met if possible: (*a*) The etiologic factors responsible for persistence of the fistula should be determined; (*b*) the segment of intestine from which the false communications have their origin should be determined; (*c*) it should be known whether the bowel distal to the lesion is patent; (*d*) an adequate trial of conservative management should have been made; (*e*) the general condition of the patient should be evaluated; (*f*) all evidences of acute inflammation about the fistulous tract should have subsided.
6. Conservative surgical treatment, such as short-circuiting or sidetracking procedures, is used when the patient cannot meet the prerequisites for a more extensive, direct surgical approach.
7. In applying resection methods in the treatment of persistent, external fecal fistulas, (*a*) the incision should, when possible, encircle and excise the fistulous tract; (*b*) in most cases best results will be obtained if the peritoneum is opened and the affected segment of bowel is mobilized and inspected; (*c*) all diseased tissue should be removed.
8. The types of persistent external fecal fistulas in which treatment is most difficult are (*a*) those in which the patient is a woman and the original pathologic condition was pelvic inflammatory disease with pelvic peritonitis, (*b*) those in which the fistula arises in a region affected by severe diverticulitis with perforation, (*c*) those in which the fistula passes through bone and (*d*) those in which the fistula is associated with enteroabdominal actinomycosis.
9. In the 65 cases of persistent external fecal fistulas of this series, in each of which treatment was surgical, there were two hospital deaths (3 per cent).

PENETRATION OF PENICILLIN INTO FOCI OF INFECTION

ISADORE E. GERBER, M.D.; GREGORY SHWARTZMAN, M D
and
GEORGE BAEHR, M D
New York

The control of infection by penicillin is generally acknowledged to be dependent on the susceptibility of the bacterial species, the relative resistance of the strain responsible for the infection and the duration of its exposure to a therapeutically effective concentration.[1] To these three factors we would add a fourth, the attainment of a concentration in the blood sufficiently high to secure penetration into dense inflammatory foci in which bacteria are embedded. Very much higher blood levels are necessary to obtain this objective than for simple sterilization of the blood stream.

In order to facilitate the penetration of chemotherapeutic agents into the vegetations of subacute bacterial endocarditis, some clinicians[2] have heparinized their patients. It is doubtful whether the prolongation of the coagulation time of the blood to thirty or sixty minutes has any appreciable effect on the masses of blood platelets and fibrin of which the vegetations of subacute bacterial endocarditis are composed, especially since they are invaded very early by actively proliferating fibroblasts. Autopsies on heparinized patients with subacute bacterial endocarditis have revealed no gross or microscopic evidence to substantiate the hypothesis that heparin in the amounts employed exerts any effect on the structure of the vegetations. We have therefore omitted the administration of heparin in the penicillin therapy of the last 25 patients with subacute bacterial endocarditis and have achieved sterilization of the blood stream and apparently complete

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From the First Medical Service and the Division of Bacteriology Laboratories of the Mount Sinai Hospital

The work on which this paper is based was done under contract recommended by the Committee on Medical Research, between the Office of Scientific Research and Development and the Mount Sinai Hospital

[1] Rammelkamp, C H, and Maxon, T: Resistance of Staphylococcus Aureus to the Action of Penicillin, Proc Soc Exper Biol & Med **51:** 386 389 (Dec) 1942 Dawson, M H; Hobby, G L, and Lipman, M O Penicillin Sensitivity of Strains of Nonhemolytic Streptococci Isolated from Cases of Subacute Bacterial Endocarditis, ibid **56:** 101 102 (June) 1944. Cooke, J. V.: A Simple Clinical Method for the Assay of Penicillin in Body Fluids and for the Testing of Penicillin Sensitivity of Bacteria, J. A M A **127:** 445 449 (Feb 24) 1945 Bloomfield, A L, Kirby, W. M. M, and Armstrong C D: A Study of 'Penicillin Failures,' ibid **126:** 685 691 (Nov. 11) 1944

[2] Kelson, S R, and White, P D.: A New Method of Treatment of Subacute Bacterial Endocarditis, J A M. A. **113:** 1700 1702 (Nov 4) 1939. Loewe, L; Rosenblatt, P, Greene, H J., and Russell, M: Combined Penicillin and Heparin Treatment of Subacute Bacterial Endocarditis, ibid **124:** 144 149 (Jan 15) 1944 Dawson, M H, and Hunter T. H: The Treatment of Subacute Bacterial Endocarditis with Penicillin, ibid. **127:** 129 137 (Jan 20) 1945.

elimination of the infection in the valves in 22 by more careful attention to the attainment of high blood levels of penicillin.

In spite of the fact that penicillin is readily diffusible, it does not penetrate from the blood stream into the normal spinal fluid, tears, breast milk and saliva or into the cornea, lens, vitreous humor, brain, dura, nerves and bone marrow unless huge amounts are administered parenterally and extremely high blood levels are attained. In the presence of an inflammatory process with increased vascularization, slight penetration can be accomplished into these tissues. Although only a trace is found in the normal spinal fluid after parenteral doses as high as 300,000 units, the blood-brain barrier becomes permeable during meningitis to small but therapeutically effective concentrations

TABLE 1.—*Coefficients of Resistance to Penicillin of Organisms Isolated in Twenty-Nine Cases of Subacute Bacterial Endocarditis*

Number of Cases	Organism	Coefficient of Resistance
4	Streptococcus viridans	1
1	Staphylococcus albus	1
8	Streptococcus viridans	2
1	Streptococcus hemolyticus	2
8	Streptococcus viridans	3
2	Streptococcus viridans	5
1	Streptococcus viridans	10
1	Enterococcus	10
1	Streptococcus viridans	20
1	Enterococcus	25
1	Enterococcus	150

Similarly a therapeutic level may be found in the normal aqueous of dogs only after the intravenous administration of a dose comparable to 900,000 units in man, yet effective concentrations are achieved after much smaller doses in the presence of a corneal ulcer or abrasion[3]

On the other hand, some organs and tissues such as the extraocular muscles and even some less vascularized tissues like the sclera and conjunctiva manifest a selective absorption of the drug and may at times contain a concentration greater than that of the blood Infections in well vascularized soft tissues respond to concentrations of the drug that are completely ineffective in relatively avascular hard tissues such as bones[4]

TABLE 2—*Dose of Penicillin Recommended for Infections with Organisms of Varying Coefficients of Resistance*

Coefficient of Resistance of Infecting Organism	Penicillin Dose Recommended by Intramuscular Injection Every Three Hours	Peak Blood Concentration to Be Achieved *
1	15,000	0.5
2 to 3	25,000	1.0
3 to 5	50,000	2.0
5 to 10	100,000	6.0
10 to 20	200,000	11.0
20 to 30	300,000	16.0

* In units per cubic centimeter of blood serum Peak is obtained about twenty minutes after intramuscular injection

It has been the general experience that much larger doses and much higher blood levels must be maintained to control infections in tissues with a relatively poor blood supply. Our own experience would indicate that there may be other tissue barriers as well as the degree of vascularization of an infected focus which determine the absorption capacity of a tissue.

It is still the generally accepted practice to resort to continuous intravenous or intramusucular therapy in severe infections with bacteremia and to vary the total daily dose, depending on the in vitro resistance of the organism. This technic results ordinarily in the maintenance of a uniform blood level of sufficient height to accomplish sterilization of the blood of bacteria of comparatively low resistance, but it may fail to eliminate the more resistant bacteria and those embedded in the primary focus, i e in the vegetations of subacute bacterial endocarditis, in a thrombophlebitis or in an osteomyelitis. Under these circumstances the blood may again become infected shortly after discontinuance of prolonged continuous intravenous or intramuscular therapy as the result of outgrowth of bacteria from the primary focus In our experience a total daily dose of penicillin may often be more effective in eradicating such primary foci of infection if it is given in divided doses of large size rather than as a continuous intravenous or intramuscular drip.

Table 1 illustrates the difference in the penicillin resistance of the bacteria isolated from 29 cases of subacute bacterial endocarditis. Employing the standard Staphylococcus aureus H strain for the measurement of blood levels of penicillin, we arbitrarily established the coefficient of resistance of this organism to penicillin as unity. The penicillin resistance of the isolated organisms is expressed in terms of comparison to the standard The minimum penicillin blood concentration necessary in a given case is estimated by multiplying the coefficient of resistance of the infecting organism by 0.16 unit, the minimal effective level established for the standard strain of staphylococci by Keefer.

TABLE 3—*Penicillin Blood Level Obtained by Continuous Intravenous Infusion*

Total Daily Dose, Units of Penicillin	Average Range of Blood Levels,* Units per Cc of Blood Serum
100,000	0.1 to 0.2
200,000	0.2 to 0.4
500,000	0.8 to 1.2

* These figures represent an average of at least ten series of determinations, with from two to five determinations in each series

We have outlined in table 2 the peak concentrations which seem, in our clinical experiences, to be required for the treatment of infections with organisms with varying coefficients of resistance.

In our early experiences with penicillin, continuous intravenous administration was employed to obtain constant blood levels of sufficient height to exceed the estimated resistance of the infecting organism The blood levels obtained by this method, and by continuous intramuscular drip, are listed in table 3.

Although a favorable response was obtained in many infections, a number of therapeutic failures were encountered in spite of the fact that the blood levels were consistently higher than required in vitro to match the coefficient of resistance of the infecting organism Autopsies in 2 cases indicated that sterilization of the underlying infected focus, such as valvular vegetations in subacute bacterial endocarditis, or infected thrombi, had not been achieved

The much greater rise (and fall) of the blood level after single intramuscular injections of various amounts of penicillin[5] are recorded in table 4. Occasional discrepancies were encountered, for example when the blood level of penicillin after the intramuscular injection of 100,000 units in a single dose failed to rise above 2 units, although the usually observed peak was 6.6 units. The reason for such discrepancies has not been determined. It does not seem to depend on the volume output of the urine, nor is the discrepancy constant in the same individual.

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[3] Struble, G G, and Bellows, J G Studies on the Distribution of Penicillin in the Eye and Its Clinical Application, J A M A **125:** 685-690 (July 8) 1944 Leopold, I H, and LaMotte, W O, Jr Penetration of Penicillin in Rabbit Eyes with Normal, Inflamed and Abraded Corneas Arch Ophth **33:** 43-46 (Jan) 1945

[4] Bigger, J W Treatment of Staphylococcal Infections with Penicillin by Intermittent Sterilization Lancet **2:** 497-500 (Oct 14) 1944 Dawson, Hobby and Lipman[1] Bloomfield, Kirby and Armstrong[2]

Table 4.—*Penicillin Blood Level Obtained After a Single Intramuscular Injection* *

Amount Injected, Units of Penicillin	Time After Injection: Units per Cc. of Blood Serum			
	20 Min.	40 Min.	60 Min.	120 Min.
15,000	0.5	0.2	0.14	Trace
20,000	0.8	...	0.3	0.06
25,000	1.0	0.8	0.6	0.1
30,000	1.3	...	0.8	0.13
40,000	2.0	1.3	1.0	0.4
50,000	2.0	1.5	1.3	0.6
100,000	6.6	4.0	2.5	1.0
200,000	11.4	6.6	4.3	1.2
[illegible]00,000	16.0	13.0	9.5	2.3

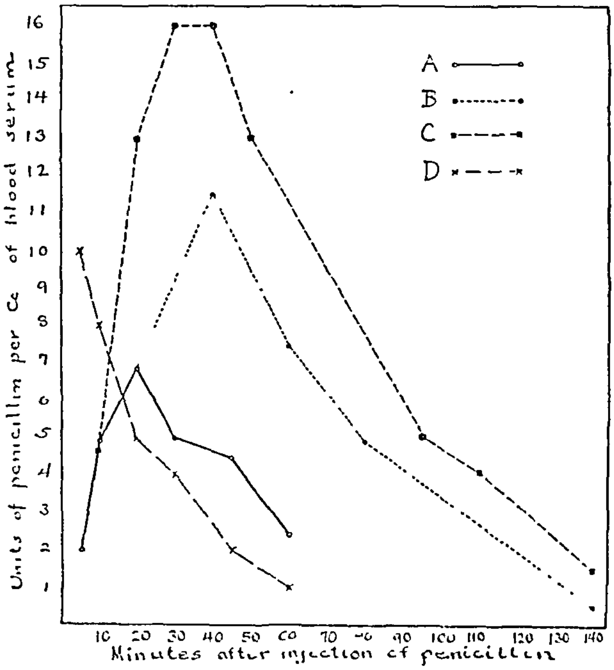
* These figures represent an average of at least twenty-five series of determinations, with from three to six determinations in each series. The figures are only averages and do not indicate the range. The variations in some instances were wide, but on the whole the averages listed represent a fair picture of the blood level which may be anticipated with the various doses employed.

Our clinical experience seemed to warrant the conclusion that the repeated exposure of bacteria with a very high coefficient of resistance to high peak concentrations of penicillin in the blood, even though of short duration, are often of greater therapeutic efficacy than continuous blood levels at lower concentrations. This has been true especially under conditions in which the bacteria are in deeply situated foci of infection, as on the heart valves, where extremely high peak levels are necessary to secure penetration of therapeutically effective concentrations. In subacute bacterial endocarditis both the continuous intravenous or intramuscular injection of 200,000 to 500,000 units a day and the intermittent intramuscular injection of the same total amount in divided doses every three hours for four or five weeks are equally efficacious in controlling the infection permanently when the infecting organism is of relatively low resistance (one to three times the resistance of the standard strain of Staphylococcus aureus H). Therapeutic failures were encountered after the continuous as well as intermittent injection of penicillin, when the infection was due to organisms (Streptococcus viridans or Enterococcus) which were five to twenty times as resistant to penicillin as the standard test organism. In these patients the blood stream is usually sterile during the four weeks while therapy is being given, but the bacteremia may recur soon after treatment is discontinued. These therapeutic failures were attributed to the fact that only surface sterilization of the vegetations had been achieved.

Because of this experience we altered our treatment of subacute bacterial endocarditis by employing only intermittent intramuscular injections, giving 25,000 to 50,000 units at three hour intervals, supplemented when necessary with additional "booster doses" of 50,000 or 100,000 units several times a day. This treatment schedule is continued for four or more weeks. When the infecting organism responsible for the bacteremia is exceptionally resistant (coefficient of resistance of 5 to 20) we have been more successful with the use of supplementary "booster doses" of 100,000 or 200,000 units every twelve hours, in addition to routine intramuscular injections of 50,000 units at three hour intervals. More recently we have increased the routine dosage for these patients to 100,000 units every three hours for five weeks.

In a patient with endocarditis due to an enterococcus with a resistance coefficient of 150, we have succeeded in clearing the blood of bacteria only by administering 1,000,000 units every three hours with "booster doses" of an additional 1,000,000 units twice a day, a total daily dosage of 10,000,000 units. Although the blood stream was free from bacteria throughout the five weeks of therapy, permanent sterilization of the vegetations was not achieved and blood cultures were again positive within a week after cessation of treatment.

Of 29 patients with subacute bacterial endocarditis treated by us with penicillin, 6 died of embolism or circulatory failure during or soon after completing therapy and must be regarded as treatment failures. In the 1 patient whose blood stream was sterilized of an Enterococcus with a resistance of 150, the blood infection promptly recurred after the completion of five months of therapy. Three patients required a second course of treatment with larger doses before the blood stream was permanently sterilized. One required a third course of treatment because of recurrence three months after his discharge from the hospital and has now been well for eight months. Twenty-two of the 29 patients in the series have remained well and bacteria free for six to nineteen months since discharge.



Blood levels in units per cubic centimeter of serum after injection of penicillin by intravenous and intramuscular routes: *A*, penicillin blood level curve after the intramuscular injection of a single dose of 100,000 units; *B*, curve after a second single dose of 100,000 units given intramuscularly twenty minutes after the first dose of 100,000, i. e., when the peak concentration of the first dose is obtained; *C*, curve after a second single dose of 200,000 units given intramuscularly ten minutes after the first dose of 100,000 units; *D*, curve after the intravenous injection of a single dose of 100,000 units

In purely local infections without bacteremia, the maintenance of a constant level of penicillin in the blood is not essential. In fact, in subacute or chronic local infections in which the organisms are encased in dense granulomatous tissue it is obviously more important to achieve exceptionally high levels in the blood several times a day so as to favor penetration into the granulomatous area. Whenever possible, the penicillin should also be repeatedly injected in high concentrations directly into such infected foci. As an example, good results were obtained in a patient whose chest was infected with Actinomyces with a coefficient of resistance to penicillin of 50 by administering 500,000 units in two massive doses daily for four weeks. The penicillin blood level twenty minutes after the intramuscular injections of 200,000 units reached 11.4 units, after 200,000 units intramuscularly and 100,000 units into the chest wall, 16 units per cubic centimeter of serum. This therapeutic result probably could not have been achieved if the same total daily dose had been spread thinly over twenty-four hours by a continuous intravenous drip or by frequent small intramuscular injections.

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CONCLUSIONS

1. In our experience intermittent intramuscular injections of large doses of penicillin at three hour intervals seem in general to be more effective in the control of bacteremia and of local infections than continuous intravenous administration of the same total daily amount.

2. The intramuscular administration of penicillin in divided doses has the distinct advantage of producing a higher peak level in the blood intermittently throughout the day, thereby favoring penetration of penicillin into vegetations of acute and subacute bacterial endocarditis and into suppurative thrombophlebitis or other primary sites of bacteremia.

3. To assure penetration of adequate amounts of penicillin into primary foci responsible for bacteremia (i. e. vegetations, thrombophlebitis), additional massive "booster doses" several times a day are often desirable. Such "booster doses" should be five or six times the routine intramuscular dosage which has produced blood levels sufficient to clear the blood of bacteria.

4. Subacute bacterial endocarditis and other chronic infections due to organisms of relatively high penicillin resistance are more advantageously treated with massive doses at frequent intervals throughout the day (every three hours). The minimum duration of therapy of subacute bacterial endocarditis, in our experience, should be five weeks.

5. In purely localized infections with highly resistant organisms, such as Actinomyces, penicillin is best concentrated in a few massive intramuscular doses each day in order to favor penetration by means of exceptionally high peak levels and, if possible, also administered directly into the infected area.

Sanitation in the Environment.—The sanitary control of the environment is the most important foundation stone of a communitywide public health program. The simple sanitary principles for prevention of disease and promotion of community health that may be applied in any community, large or small, are quite elementary, yet they are so fundamental that they must always be the chief concern of the official health service. The subject is so important that the major portion of the early textbooks on preventive medicine and public health were devoted to a description of the details of the application of the principles of environmental sanitation in the community.—Smillie, Wilson G.: Preventive Medicine and Public Health, New York, Macmillan Company, 1946.

SUPRADIAPHRAGMATIC SECTION OF THE VAGUS NERVES

Effect on Gastric Secretion and Motility in Patients with Peptic Ulcer

THOMAS F. THORNTON Jr., M.D.
EDWARD H. STORER, M.D.
and
LESTER R. DRAGSTEDT, Ph.D., M.D.
Chicago

Complete division of the vagus nerves to the stomach for the treatment of intractable duodenal ulcer in 2 patients was reported by Dragstedt and Owens [1] in 1943. Subsequent reports of additional cases were made by Dragstedt, Palmer, Schafer and Hodges [2] in 1944 and by Dragstedt and Schafer [3] in 1945. At the present time a total of 38 patients with duodenal ulcer, gastric ulcer or gastrojejunal ulcer have been treated in this clinic by this principle. Details of the surgical technic, indications and end results of the procedure will be discussed elsewhere. In 34 of the patients section of the vagus nerves was accomplished by exposing the lower esophagus after a left thoracotomy and dividing the fibers just above the diaphragm.[3] In 4 patients a laparotomy was performed, the triangular ligament to the left lobe of the liver was divided to expose the cardia, the esophagus was mobilized and pulled downward into the abdomen, and the vagus trunks were ligated and divided along the lower esophagus. The postoperative course of these patients has been characterized by complete relief of ulcer symptoms, objective evidence of healing of the ulcers and definite improvement in general health in almost all cases. In a further investigation of the mechanism of these effects, studies have been made on the gastric secretion and motility in a small series of ulcer patients both before and after section of the vagus nerves.

Evidence that an abnormality in the secretion of gastric juice is present in most if not all ulcer patients and that this may cause the lesion and prevent it from healing has accumulated from both the clinic and the experimental laboratory. A part of this evidence has been summarized recently by one of us [4] and need not be reviewed here. Most of the clinical studies on gastric secretion in ulcer patients have been limited to observations on the secretory response to certain specific stimulants, such as the Ewald meal, alcohol or histamine, as compared with normal persons. While considerable variations have been found, patients with duodenal ulcer on the whole and those with gastric ulcer perhaps less so secrete more gastric juice in response to these types of stimuli than do normal persons. The effect has not been found to be sufficiently uniform, however, to be of diagnostic value.[5] Comparatively little attention has been given to the state of activity of the gastric glands in the intervals between meals and to the volume and acidity of the continuous secretion in the absence of any known type of secretory stimulus.

From the Department of Surgery of the University of Chicago.

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CONTINUOUS OR NIGHT SECRETION OF GASTRIC JUICE

Beaumont and Pavlov are probably mainly responsible for the view that in the absence of food or psychic stimuli the gastric glands are quiescent. It is chiefly due to the extensive studies of A. J. Carlson on man and lower animals that we now know that this view is incorrect. According to Carlson,[6] a continuous secretion of gastric juice is a normal phenomenon and occurs even in prolonged fasting. The cause is unknown. Presumably it might be due to a persistent secretory tonus in the vagi, the production of secretagogues through the autodigestion of the gastric juice, the endogenous production of histamine-like substances or a combination of these factors.

The studies embodied in this report were made as follows: At 9 p. m. the stomach was emptied and lavaged with an Ewald tube. When the returns were clear, a Levine tube was introduced through the nose into the stomach and continuous suction maintained until 9 a. m. with the Wangensteen apparatus. During this period the patients were shielded from all psychic secretory stimuli, and as a rule sleep was little interfered with. When successfully conducted it is probable that this continuous aspiration more nearly collects the entire gastric output than can be secured by the intermittent evacuation of the stomach. Even so, it is appreciated that varying amounts of gastric juice probably escape into the duodenum. The aspirate is frequently discolored by regurgitated bile and duodenal content. Such specimens should be discarded. From 3 to 10, twelve hour aspirations were carried out on each patient, and in the ulcer cases the studies were repeated after the vagus section.

TABLE 1.—*The Continuous Night Secretion of Gastric Juice in Patients with Carcinoma of the Stomach*

Patient Number	Age	Volume, Cc.	Free Acidity, Clinical Units	Total Acidity, Clinical Units
1	56	260	0	40
2	31	220	21	39
3	74	84	0	44
4	74	75	0	18
5	54	290	8	22
6	60	500	0	25
7	60	200	11	30
8	60	290	0	38
9	30	430	0	41
Average		261	4	33

Table 1 shows the average gastric aspiration obtained from 9 patients with carcinoma of the stomach. The volume varied between 75 and 500 cc., with an average of 261 cc., and the free acidity between 0 and 21 clinical units. Table 2 displays the continuous night secretion in 5 patients with carcinoma of the colon. The volume here averaged 238 cc. and ranged from 85 to 370 cc. The free acidity varied between 0 and 18 clinical units. Table 3 shows the night secretion of 6 patients with chollelithiasis and chronic cholecystitis. The average volume was 385 cc., with a range between 100 and 630 cc. and a free acidity between 0 and 13 clinical units. In considerable contrast to these three groups, table 4 presents the results obtained in 8 patients with duodenal and 2 with gastric ulcers. The average twelve hour continuous secretion for this group was 821 cc., and this decreased to 335 cc. after division of the vagus nerves. The free acidity was 47 clinical units before and fell to 15 units after the operation. In table 5 are presented data from 9 patients with ulcers but with certain complications which make the determination of continuous gastric secretion more uncertain. Four of this group are patients with duodenal ulcer and high grade cicatricial stenosis at the pylorus. Because of the necessity for relieving the obstruction, a subdiaphragmatic section of the vagus nerves was carried out along with a posterior gastrojejunostomy. The material aspirated from the stomach after the operation always contained bile. The remaining 5 patients had stoma ulcers, 3 following gastric resection and 2 following gastroenterostomy. In these also the collection was uncertain because of admixture with duodenal content. However, in spite of this fact a definite reduction in both the volume and the free acidity of the gastric content was brought about by division of the vagus nerves.

TABLE 2.—*The Continuous Night Secretion of Gastric Juice in Patients with Carcinoma of the Colon*

Patient Number	Age	Volume, Cc.	Free Acidity, Clinical Units	Total Acidity, Clinical Units
1	69	85	0	31
2	61	205	16	53
3	55	370	18	29
4	58	360	0	15
5	60	170	11	26
Average		238	9	30

These data confirm and amplify those previously reported from this laboratory obtained by similar methods.[7] They provide definite evidence that an abnormally large continuous secretion of acid gastric juice occurs in most patients with ulcer in the absence of stimulation by food or psychic factors. This excessive secretion appears to be due chiefly to an abnormally great secretory tonus in the vagus nerves and is reduced to normal values by complete vagus section.

The Gastric Secretory Response of Ulcer Patients to Histamine Before and After Vagus Section.—It has been demonstrated in experimental animals that histamine stimulates gastric secretion after section and subsequent degeneration of the vagus nerves. It causes secretion of gastric juice from a denervated accessory stomach pouch, and this is not abolished by atropine. The action of histamine must therefore be on the peripheral neuroglandular apparatus or directly on the secreting cells. Studies on the effect of histamine on the human stomach after vagotomy have not been reported.

TABLE 3.—*The Continuous Night Secretion of Gastric Juice in Patients with Cholelithiasis and Chronic Cholecystitis*

Patient Number	Age	Volume, Cc.	Free Acidity, Clinical Units	Total Acidity, Clinical Units
1	27	630	13	31
2	49	100	0	24
3	27	360	12	26
4	51	175	13	30
5	45	445	0	27
6	61	600	0	17
Average		385	6	26

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[6] Carlson, A. J.: Physiol. Rev. 3: 1, 1923.

[7] Dragstedt, Palmer, Schafer and Hodges.[2] Dragstedt and Schafer.[3]

In the present study the response to histamine stimulation was determined by the method of fractional gastric analysis on all the 19 patients in this series before and after section of the vagus nerves. All examinations were made in the morning in the fasting state. A Levine tube was inserted into the stomach and the gastric content aspirated. One tenth cc. of histamine dihydrochloride 1 to 1,000 solution per kilogram of body weight was injected subcutaneously and the stomach emptied every ten minutes for at least one hour. An abundant secretion of acid gastric juice was produced in all patients before operation, and there was *no diminution* either in volume or in free acidity after the vagus section. The response of a typical patient to the injection of histamine before and after vagotomy is shown in table 6.

Table 4.—*The Continuous Night Secretion of Gastric Juice in Ulcer Patients Before and After Section of the Vagus Nerves to the Stomach*

Patient	Age	Preoperative Continuous Secretion: Volume, Cc.	Preoperative Continuous Secretion: Free Acid, Clinical Units	Preoperative Continuous Secretion: Total Acids, Clinical Units	Postoperative Continuous Secretion: Volume, Cc.	Postoperative Continuous Secretion: Free Acid, Clinical Units	Postoperative Continuous Secretion: Total Acid, Clinical Units	Comment
1. J. W.	66	1,220	20	40	338	0	19	Gastric ulcer, 15 years
2. H. K.	39	723	39	58	65	24	48	Duodenal ulcer, 15 years
3. H. M.	31	775	36	54	428	6	44	Duodenal ulcer, 8 years
4. N. K.	48	717	65	81	400	19	51	Duodenal ulcer, 7 years
5. E. T.	60	786	44	61	358	0	30	Duodenal ulcer, 15 years
6. R. V.	42	1,043	82	98	486	61	82	Duodenal ulcer, 22 years
7. W. W.	57	756	54	72	523	15	56	Duodenal ulcer, 2 years
8. G. K.	43	400	31	54	248	14	42	Gastric ulcer, 4 years
9. C. O.	42	612	66	81	212	2	66	Duodenal ulcer, 15 years
10. W. K.	52	1,086	46	63	295	11	25	Duodenal ulcer
Average		821	47	66	335	15	46	

For each patient the figures given represent the average of at least three determinations.

Table 5.—*The Continuous Night Secretion of Gastric Juice in Complicated Ulcer Cases Before and After Section of the Vagus Nerves to the Stomach*

Patient	Age	Preoperative Continuous Secretion: Volume, Cc.	Preoperative Continuous Secretion: Free Acid, Clinical Units	Preoperative Continuous Secretion: Total Acids, Clinical Units	Postoperative Continuous Secretion: Volume, Cc.	Postoperative Continuous Secretion: Free Acid, Clinical Units	Postoperative Continuous Secretion: Total Acid, Clinical Units	Comment
1. H. F.	54	1,142	44	55	395	35	44	Duodenal ulcer with obstruction; subdiaphragmatic vagotomy plus gastroenterostomy
2. H. W.	56	1,241	32	51	902	0	29	Duodenal ulcer with obstruction; subdiaphragmatic vagotomy plus gastroenterostomy
3. W. S.	52	1,165	35	52	893	25	48	Duodenal ulcer with obstruction; subdiaphragmatic vagotomy [illegible]
4. J. P.	54	405	23	45	517	14	52	Duodenal ulcer with [illegible] matic vagotomy [illegible]
5. M. B.	59	1,021	22	45	412	14	36	Jejunal ulcer; take down gastroenterostomy plus supradiaphragmatic vagotomy
6. C. B.	42	200	13	36	177	0	30	Jejunal ulcer after gastric resection; supradiaphragmatic vagotomy
7. A. W.	47	566	0	21	361	0	23	Jejunal ulcer after gastric resection; supradiaphragmatic vagotomy
8. G. P.	49	1,126	12	36	233	0	19	Jejunal ulcer after gastric resection; supradiaphragmatic vagotomy
9. M. S.	42	310	6	25	395	0	30	Jejunal ulcer after gastric resection; supradiaphragmatic vagotomy

The Gastric Secretory Response of Ulcer Patients to Caffeine Before and After Section of the Vagus Nerves.—Caffeine elicits a secretion of gastric juice similar in quality to that produced by histamine.[8] This subject has recently been extensively studied by Roth, Ivy and Atkinson.[9] According to these workers, caffeine stimulates gastric secretion in man and the cat but not in the dog. Its effect is not abolished by the administration of atropine. In relatively large doses it produced acute and subacute ulceration of the gastric mucosa in cats. When given to patients with duodenal ulcer it was found to produce a characteristic prolonged secretory stimulation that was considered to have diagnostic value.

The gastric secretory response of the ulcer patients in this study to caffeine was determined by the method of Roth and his associates.[9] After emptying the stomach, 7½ grains (0.5 Gm.) of caffeine with sodium benzoate in 200 cc. of water was instilled through a Levine tube. After thirty minutes the stomach was again emptied, and thereafter ten minute fractional samples were withdrawn for analysis. Tests were made on 17 patients with duodenal, gastric and gastrojejunal ulcers. One patient failed to respond; a second showed a mild stimulation of secretion before the vagus section but not after. The remaining 15 responded with an increase in volume and free acid both before and after the vagotomy. The stimulation was as well defined after the operation as before and in general was less than that produced by histamine. A representative test is indicated in table 7.

The Gastric Secretory Response of Ulcer Patients to Insulin Hypoglycemia Before and After Section of the Vagus Nerves.—Bulatao and Carlson[10] in 1924 discovered that the injection of insulin increases gastric motility. In 1930 Roholm[11] and Kalk and Meyer[12] demonstrated that it also causes a stimulation of gastric secretion which begins when the blood sugar reaches hypoglycemic values. The secretagogue action of insulin can be abolished by the administration of an amount of glucose sufficient to counterbalance the hypoglycemia; furthermore, insulin does not augment gastric secretion in a person with diabetes unless the blood sugar is in the normal range when given The increased secretion of gastric juice in response to insulin is therefore a part of the hypoglycemic syndrome It appears to be due to a stimulation of gastric secretory fibers in the vagi for section of these nerves (Okada [13] and La Barre [14]) or the administration of atropine abolished the effect. For this reason Ihre,[8] Babkin [15] and lately Hollander [16] have recommended the use of insulin hypoglycemia as a method for testing the integrity and secretory function of the vagus nerves to the stomach. Fractional insulin gastric analyses were performed on our patients by withdrawing samples of gastric juice at ten minute intervals following the administration of 20 units of crystalline insulin subcutaneously; all tests were made in the fasting state This test was made on 17 patients before and after vagotomy. Two patients showed no response before vagotomy, so the lack of response following operation was not significant. Fifteen cases reacted to the injection of 20 units of insulin with an increase in the amount and free acidity of the gastric juice. This response was often delayed as long as an hour and was accompanied by a low blood sugar and hypoglycemic symptoms The stimulation of gastric secretion by insulin was not as pronounced as with histamine but approximated that obtained with caffeine. One patient (14, Mr. W. W.) had a slight but definite stimulation of gastric secretion in response to insulin following vagotomy. The remainder of the group were not affected by insulin following vagotomy. Table 8 presents the results in 1 such case.

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[8] Ihre, B. J. E.: Human Gastric Secretion, London, Oxford University Press, 1939.

[9] Roth, J. A.; Ivy, A. C., and Atkinson, A. J.: Caffeine and "Peptic" Ulcer, J. A. M. A. **126:** 814 (Nov. 25) 1944.

[10] Bulatao, E., and Carlson, A. J.: Am. J. Physiol. **68:** 148, 1924; **69:** 107, 1924.

[11] Roholm, K.: Acta med. Scandinav. **73:** 472, 1930.

[12] Kalk, H., and Meyer, P. F.: Ztschr. f. klin. Med. **120:** 692, 1932.

TABLE 6—*Effect of Histamine on Gastric Secretion in a Patient with Duodenal Ulcer Before and After Section of the Vagus Nerves to the Stomach*

Time	Volume, Cc	Free Acid, Clinical Units	Total Acid, Clinical Units	Comment
		Before Operation		
8 00 8 10	10	66	73	8 10 0 7 cc of histamine solution
8 20	65	72	80	
8 30	51	110	114	8 30 Typical ulcer pain
8 40	38	115	119	
8 50	65	109	114	
9 00	32	107	114	
9 10	45	100	107	
9 20	25	100	108	9 20 Pain about gone
9 30	24	92	102	
		Ten Days After Operation		
7 30 7 40	15	44	57	
7 50	18	56	65	7 50 0 7 cc of histamine solution
8 00	44	75	85	
8 10	60	100	111	
8 20	61	100	110	
8 30	19	104	112	
8 40	22	100	111	
8 50	32	82	92	

The Gastric Secretory Response of Ulcer Patients to a Sham Meal Before and After Section of the Vagus Nerves.—The classic researches of Pavlov proved that the sight, smell or taste of palatable food provokes a secretion of gastric juice in the stomach. The effect is a true conditioned reflex and is mediated by the vagus nerves It would appear that the use of this principle in the sham meal ought to be the most effective way to test the excitability of the vagus secretory fibers in ulcer patients as compared with normal persons. Ten of the ulcer patients in this study were given a sham meal gastric analysis before and after vagotomy. The test was performed by having the patient chew certain foods without swallowing The gastric content was aspirated every ten minutes for an hour. Only 3 of the 10 patients showed a definite increase in the volume and acidity of the gastric juice in response to the sham meal before operation. None of the patients responded following the vagotomy. Table 8 presents the findings in 1 case. The unsatisfactory results obtained with this test are probably due to several factors. It is difficult to get patients to chew food and refrain from swallowing some of it. The presence of the indwelling tube doubt-

TABLE 7—*Gastric Secretory Response to Caffeine in a Patient with Duodenal Ulcer Before and After Section of the Vagus Nerves*

No	Time	Volume, Cc	Free Acid, Clinical Units	Total Acid, Clinical Units	Comment
			Before Operation		
1	8 10 8 20	14	30	40	8 20 7½ grains of caffeine in 200 cc of water
2	8 30	9	0	5	
3	8 40	9	4	13	
4	8 50	6	10	20	8 50 Stomach emptied, 200 cc. obtained
5	9 00	16	48	52	
6	9 10	18	45	55	
7	9 20	26	48	58	
8	9 30	12	43	55	
9	9 40	8	35	53	
10	9 50	7	20	40	
			Eleven Days After Operation		
1	7 55 8 05	14	7	23	8 05: 7½ grains of caffeine in 200 cc of water
2	8 15	7	17	29	
3	8 25	10	23	37	
4	8 35	12	49	62	8 35 Stomach emptied; 15 cc. obtained
5	8 45	44	57	69	
6	8 55	36	69	81	
7	9 05	24	48	66	
8	9 15	79	8	22	
9	9 25	36	26	38	
10	9 35	18	34	48	

TABLE 8—*Gastric Secretory Response of Ulcer Patients to Insulin Hypoglycemia Before and After Section of the Vagus Nerves*

Time	Volume, Cc	Free Acid, Clinical Units	Total Acid, Clinical Units	Comment
		Before Operation		
9 05 9 15	34	0	17	9 05 Blood sugar 71 mg. per 100 cc
9 25	15	0	14	9 15 20 units of insulin
9 35	7	0	15	
9 45	9	0	20	
9 55	33	0	22	
10 05	8	18	32	
10 15	8	18	34	10 15 Blood sugar 18 mg per 100 cc; drowsy and weak
10 25	8	28	54	
10 35	7	32	92	
10 45	11	85	98	10 40 Blood sugar 18 mg per 100 cc.
10 55	12	53	84	
11 05	3	28	72	
		Eight Days After Operation		
7 45 7 55	8	0	48	7 45 Blood sugar 58 mg. per 100 cc
8 05	3	0	120	7 55 20 units of insulin
8 15	2	0	57	
8 25	5	0	29	
8 35	27	0	13	
8 45	6	0	17	
8 55	8	0	19	
9 05	2	0	19	
9 15	—1	0	.	9 10 Blood sugar 32 mg per 100 cc
9 25	0	..	..	

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[13] Okada S, Kuramochi, K; Tsukahara, T, and Oomoue, T Pancreatic Function Humoroneural Regulation of Gastric, Pancreatic and Biliary Secretions, Arch Int Med **13**: 446 (April) 1929

[14] La Barre, J, and de Cespedes, C Compt rend Soc de biol **106**: 481 and 1249, 1931

[15] Babkin B P Secretory Mechanism of the Digestive Glands, New York, Paul B Hoeber, Inc, 1944

[16] Hollander, I Gastroenterology **3**: 463, 1944

less exerts a definite psychic inhibition and, lastly, it is probable that more attractive food should have been served.

The Motility of the Empty Stomach of Ulcer Patients Before and After Section of the Vagus Nerves.—The normal stomach in man does not remain inactive in the interdigestive phase but exhibits a periodic activity which gives rise to the hunger sensation. According to Carlson[17] the pressure variations in the stomach as recorded by the usual balloon method are caused by (1) a tonus rhythm, (2) hunger contractions and (3) respiratory and pulse pressure changes. The tonus contractions vary in amplitude but have a remarkable uniformity of rate, twenty seconds. The amplitude increases without a change in rate during hunger periods and is much decreased immediately after a period. The hunger periods are initiated by weak contractions with long pauses; the contractions become stronger, the pauses briefer, with the climax a number of very powerful and rapid contractions approaching incomplete tetanus. Relaxation is relatively abrupt. The periods vary in duration from a few minutes to one and one-half hours, with a quiescence of one-half to two hours between hunger periods.

TABLE 9.—*Gastric Secretory Response of Ulcer Patients to a Sham Meal Before and After Section of the Vagus Nerves*

Time	Volume, Cc.	Free Acid, Clinical Units	Total Acid, Clinical Units	Comment
		Before Operation		
8 00-8 20	17	20	35	
8 30	11	0	13	
8.40	16	0	17	
8 50	13	56	55	8 40 Sham meal started
9 00	22	39	59	8 50 Sham meal completed
9:10	27	61	81	
9·20	25	70	87	
9 30	12	57	62	
9 40	16	49	69	
		Thirteen Days After Operation		
9 00-9.10	6	0	14	
9:20	24	0	13	9 10 Sham meal started
9.30	9	0	22	9 20 Sham meal completed
9 40	5	0	20	
9 50	15	0	18	
10 00	25	0	18	

In a recent review Quigley[18] stated that the majority of workers have found that the hunger contractions of ulcer patients are normal or only slightly exaggerated. Shay and his associates[19] report hyperperistalsis, hypertonicity and hypermotility in uncomplicated duodenal ulcer which coincides with the usual observation of the roentgenologist. Barron and Curtis[20] studied the motility of the empty stomach of a patient with vagotonia and reported that after division of the left or anterior vagus nerve there was a decided decrease in the duration of the periods of motility and in the number and amplitude of the contractions. This effect persisted for at least five months.

In the present studies the balloon for recording gastric contractions was attached to a Miller-Abbott tube, which in turn was connected with a chloroform manometer. The stomach had been emptied for the previous fifteen hours by continuous gastric suction. Seconal 0.9 Gm. by mouth or pentobarbital calcium 0.18 Gm. by rectum was given to encourage sleep during the test. The drugs in these doses were found to have little or no effect on gastric motility and were a great aid in securing satisfactory records.

G. K., a white man aged 42, whose kymographic record is illustrated in figure 1, had a very large gastric ulcer visualized both by x-rays and by gastroscopy. The tracing taken before operation shows gastric motility somewhat more pronounced than usually found in normal man There is a fairly high tonus rhythm culminating in a series of vigorous hunger contractions. Both the tonus and the number and amplitude of the hunger contractions were much reduced by transthoracic section of the vagus nerves.

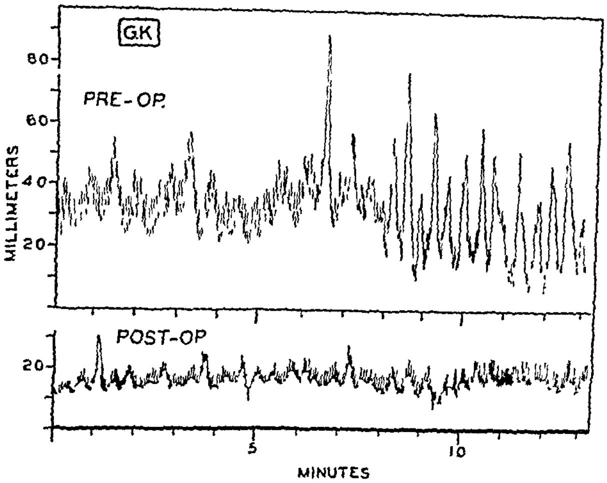

Fig 1 —Representative tracings showing the motility of the empty stomach of a patient with a gastric ulcer before (upper) and after (lower) supradiaphragmatic section of the vagus nerves to the stomach

R V, a white man aged 42, had ulcer symptoms for twenty-three years, and x-rays demonstrated a duodenal ulcer with a crater The tracings in figure 2 show exceptionally vigorous contractions of the empty stomach and almost constant motility before operation, with rather pronounced reduction after section of the vagus nerves

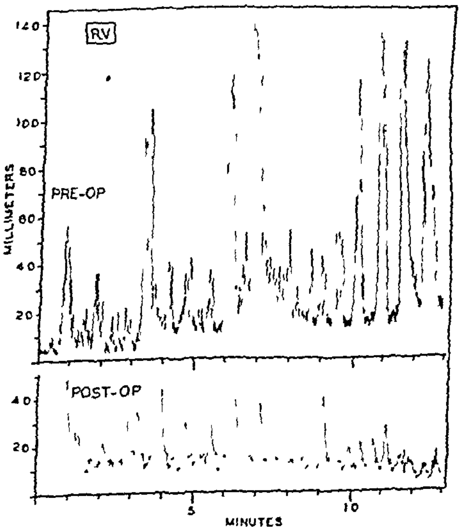

Fig. 2 - Representative tracings showing the motility of the empty stomach of a patient with a duodenal ulcer before (upper) and after (lower) supradiaphragmatic section of the vagus nerves to the stomach

J. P, a white woman aged 54, had ulcer symptoms for eight years with several massive hemorrhages. X-ray examination revealed considerable deformity of the duodenal bulb with high grade obstruction. The tracings in figure 3 show more or less continuous contractions of the empty stomach before operation, with one period of tetany. Because of the pyloric obstruction, a gastroenterostomy was performed and at the same time the vagus nerves were divided in the region of the lower esophagus. The tracings taken after the operation show a rather pronounced decrease in gastric motility. This is, no doubt, in part due to the gastroenterostomy.

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[17] Carlson, A J.: The Control of Hunger in Health and Disease, Chicago, University of Chicago Press, 1916.

[18] Quigley, J P.: Motor Physiology of Stomach, Pylorus and Duodenum, with Special Reference to Gastroduodenal Ulcer, Arch Surg 44: 414 (March) 1942.

[19] Shay, H.; Gershon Cohen, J., and Fels, S S: Ann Int. Med. **16**: 772, 1942

[20] Barron, L E, and Curtis, G M: Effect of Vagotomy on Gastric Motor Mechanism of Man, Arch Surg **34**:1132 (June) 1937.

In addition to these patients, studies have been made on 2 patients with gastrojejunal ulcers following partial gastrectomy treated by supradiaphragmatic transthoracic vagotomy and on 3 patients with duodenal ulcers. Two of these were treated by simple vagus section above the diaphragm, while on the third a gastroenterostomy was performed for obstruction, and the vagus nerves were sectioned beneath the diaphragm. In each case a definite decrease in the gastric tonus and in the frequency and amplitude of the hunger contractions was produced.

COMMENT

The data obtained in this investigation furnish strong support for the view that an excessive continuous secretion of gastric juice occurs in most patients with gastroduodenal ulcer in the absence of any known type of gastric secretory stimulus. The reduction in this secretion produced by complete division of the vagus nerves to the stomach proves that the hypersecretion is neurogenic in character. It probably represents an excessive secretory tonus in the vagus nerves of central origin and points to some functional disturbance in the nervous system as ultimately responsible for the disease. The presence of excessive motility of the stomach in many ulcer patients and its return toward the normal state after section of the vagus nerves indicates that a hypertonus of the motor augmentor fibers in the gastric vagi is also often present. Both excessive motility and excessive secretion may of course operate to produce an ulcer in the stomach and maintain its chronicity. Of these two factors the experimental data definitely indicate that hypersecretion is the more important. The beneficial results obtained by section of the vagus nerves in ulcer patients do not permit a decision on this point, since both secretion and motility are reduced.

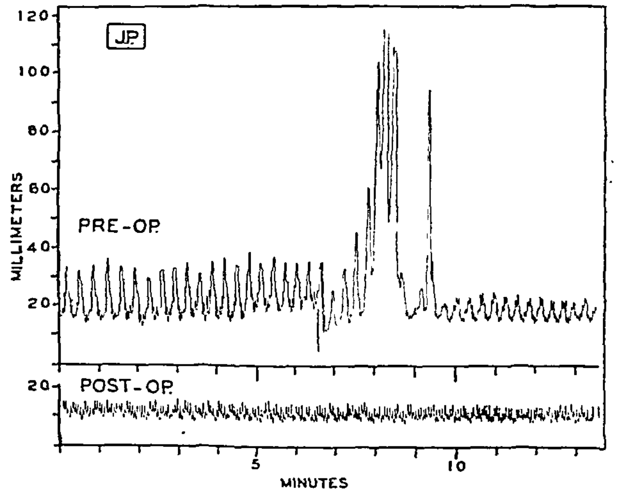

Fig. 3.—Representative tracings showing the motility of the empty stomach of a patient with obstructing duodenal ulcer before (upper) and after (lower) gastroenterostomy and subdiaphragmatic section of the vagus nerves.

While it is perhaps true that the gastric glands of ulcer patients respond to the stimulus of food, alcohol, histamine or caffeine with a greater output of gastric juice or some of its constituents than is the case in normal individuals, the results of this investigation suggest that the most pronounced and regular departure from the normal lies in the volume and acidity of the continuous night secretion. This is apt to be especially large in young patients with duodenal ulcer who present in varying degree other signs of nervous tension and instability. The determination of this night secretion appears to be the most valuable of all the gastric secretory tests from the standpoint of both diagnosis and prognosis. Patients with hypersecretion are especially prone to develop secondary stoma ulcers following gastroenterostomy or gastroduodenostomy or even after partial gastrectomy but respond very favorably to complete section of the vagus nerves.

The persistence of a secretory response to histamine after bilateral vagotomy in man is in harmony with the result obtained on lower animals and indicates that the site of action of histamine is probably directly on the cells of the gastric glands. Caffeine apparently acts at the same point, since stimulation also persists after vagus section. On the other hand, insulin hypoglycemia produces a vigorous secretion of gastric juice through stimulation of gastric secretory fibers in the vagus nerves, and this is completely abolished after bilateral vagotomy. This fact, as Hollander suggests, makes it a very valuable method to determine if the vagus section has been complete. The sham meal has a similar application and deserves further investigation.

CONCLUSIONS

1. The continuous night secretion of gastric juice in the empty stomach of patients with gastric and duodenal ulcers is usually much greater than in normal man.

2. This hypersecretion is chiefly neurogenic in character and is much reduced by section of the vagus nerves to the stomach.

3. The empty stomach of ulcer patients often displays a hypertonicity and hypermotility, with exaggerated hunger contractions, and these are returned toward the normal state after bilateral vagotomy.

4. Complete section of the vagus nerves to the stomach in man abolishes the secretion of gastric juice produced by a sham meal or by insulin hypoglycemia but has little or no effect on the response to histamine or caffeine.

5. The absence of a secretory response to a sham meal or to insulin hypoglycemia is good evidence that section of the vagus nerves to the stomach has been complete.

ABSTRACT OF DISCUSSION

DR. KEITH S. GRIMSON, Durham, N. C.: Dr. Dragstedt and his associates at the University of Chicago have translated the evidence obtained from years of physiologic and clinical study into a surgical interpretation that has developed vagotomy as a valuable addition to the group of operations currently employed for ulcer. Fifteen months ago, after discussions with him, an investigation of the clinical and physiologic effects of transthoracic vagotomy was begun at Duke Hospital. Eighteen patients with refractory ulcers that had produced serious symptoms during an average time of eleven years were subjected to transthoracic vagotomy. The ulcers healed in several weeks and there has as yet been no evidence of recurrence. The physiologic effects produced by vagotomy have been remarkable. Our observations have in most instances agreed with those presented in this paper. Twelve hour night secretion volumes were reduced from an average of 946 cc. before operation to an average of 342 cc. after operation. The acidity of the secretion of the fasting stomach was changed from an average p_H of 1.72 before operation to an average of 3.55 afterward. There was, however, considerable individual variation. Five patients had only moderate reduction. Under the conditions of our experiments both insulin hypoglycemia and histamine produced an increase of free acid before and also after the vagotomy. The increase produced by both was definitely less after operation. The average increase in free acid after histamine before operation was from 29 cc. of tenth normal hydrochloric acid to 64 cc. The average change several weeks and several months after operation was from 7 cc to 18 cc. Insulin hypoglycemia produced an average maximum increase of free acid to 105 cc. before operation and to 23 cc. several weeks and several months afterward. It is not now possible to explain this similar effect of vagotomy on chemical and nervous secretion mechanisms. Gastrometric examination revealed a remarkable reduction to subnormal of the gastric hypermotility observed before operation. The gastric stretch reflex was abolished. Relief of ulcer pain occurred promptly after the vagotomy. This could be related either to reduction of stomach motility, to reduction of acidity or to interference with sensory fibers that might have been present in the vagus. In general we have not been able to disassociate the role played by acidity from the role played by decreased motility in our clinical and physiologic study.

Dr. Francis D. Moore, Boston: Dr. Dragstedt and his group have effectively revived an operative procedure which was given clinical trial several times in the past twenty years with an abdominal approach. These previous experiences with abdominal vagotomy have been generally unsuccessful. The transthoracic operation has many anatomic and physiologic advantages which make it justified to reevaluate entirely the usefulness of vagus division in peptic ulcer. Our work on this subject at the Massachusetts General Hospital has been in progress for about eighteen months and up to the present time we have performed vagus resection on 12 patients suffering from peptic ulcer. The procedure we have used is essentially similar to Dr. Dragstedt's with the one difference that we have opened the diaphragm and resected a portion of each nerve from just below the lung root to the midportion of the gastric fundus. The symptomatic relief experienced by our patients has been much the same as that described by Dr. Dragstedt. The ulceration in our patients has usually healed in one to three weeks, the patients with jejunal ulcers taking somewhat longer to heal. I can corroborate Dr. Dragstedt's secretory findings with but few exceptions. I find that the p_H of gastric contents is raised from 1.0 to 3.0 or more units throughout the day and night and that free acidity is virtually abolished throughout the twenty-four hour period with the exception of isolated observations just before meals or late at night, when 15 to 20 units of free acid may appear. Chloride ion concentration is decreased a variable amount. There is little or no change in total base or in pepsin concentrations. Our studies on motility and sensation have been carried out in collaboration with Dr. William Chapman. We have found motility changes similar to those described by Dr Dragstedt, although there is some return of atypical gastric activity six to eight months postoperatively. In addition we have demonstrated that there is no change in the pain threshold to balloon distention in the lower esophagus, stomach, duodenum or upper jejunum following vagus resection. This signifies that the relief of pain experienced by these patients is not due to regional anesthesia produced by peripheral nerve section. Instead, it results from a fundamental alteration in some aspect of the ulcer-producing mechanism. The ultimate worth of this procedure will rest on the long-term clinical end results. It is too soon to estimate the value of this operation on the basis of data available at present.

Dr. Geza de Takats, Chicago: Dr. Dragstedt and his associates have presented us with the first technically complete vagotomies ever described in man. Partial vagotomies, usually performed below the diaphragm, have been reported many times with promising but not permanent results; nor has any effort been made to prevent regeneration of the vagus nerves. My early vagotomies done in 1936 and 1939 certainly suffered from both of these defects and showed no lasting effect. That it has been clinically possible to reduce both the excessive volume and the acidity of gastric nocturnal secretion by complete vagotomy is the second great advance the authors have made. This reduction of volume and acidity has been definite in my limited experience with the supradiaphragmatic vagotomy. Most striking, however, is the sudden relief of long-lasting epigastric pain, heartburn and hunger pangs. Gastric and esophageal hypertonus and hypermotility are reduced after vagotomy. The motor component in the symptomatology of duodenal ulcer is dominant, even if the acid secretion is the one which initiates and perpetuates the ulcer. This motor activity is not all central; reflex gastric and esophageal spasms originating from the stomach, duodenum, gallbladder, heart or lung have been definitely demonstrated. Vagotomy has a vast inhibiting influence on these reflexes, since it cuts the efferent side of the reflex arc. The pain of the penetrating lesion, deep, boring and continuous, is not mediated by the vagus. Sympathetic block or splanchnic section can stop such pain unless somatic intercostal fibers are involved by peritoneal involvement. I have stopped the pain of a threatening perforation of the duodenum by blocking the left dorsal sympathetics from the sixth to the ninth segment. Vagotomy may have to be combined with typical gastric operations; the abdominal vagotomy has the great advantage of permitting the examination of the local lesion. The immediate problem now is that of case selection; medically resistant young patients with hypermotility, hypersecretion, no serious stenosis or hemorrhage could be selected for vagotomy, while others who have undergone repeated gastric operations, those with marginal ulcers and inflammatory lesions, in whom a subtotal gastrectomy would be indicated, might be given a trial with vagotomy.

Dr. L. L. D. Tuttle, Houston, Texas: Surely the Chicago group has become aware that the present state of affairs for the handling of peptic ulcer is not what it should be. It is only natural after use of such radical procedures as subtotal resection for ulcer that we look for a procedure that may not have such a tendency toward production of a secondary anemia, a picture simulating pernicious anemia: the weakened patient with swollen ankles and one that may fail to hold his weight and strength. J. Shelton Horsley pointed out in 1933, while discovering the neurogenic theory for the causation of peptic ulcer, that if we were to relieve this condition we must control hypersecretion, hypermotility and hypertonicity. Harvey Cushing pointed out that the truest response of the parasympathetic system (the cranial part) came from stimulation of the interbrain or near that point. He lost 3 patients, who at autopsy showed peculiar lesions in the stomach (perforation of the esophagus, the stomach and the duodenum). These were explained on the basis that stimulation of the vagus had caused one or all three of the responses oversecretion, motility and tonus. It may be possible to approach the question from another angle, that of stimulating the sympathetic instead of suppressing the parasympathetic system. In that case one surely would have to adhere to the theory that normal conditions really are an absolute balance between the sympathetic and the parasympathetic. We have been convinced that caffeine has a deleterious effect on the ulcer patient. It is worth knowing that this is a peripheral effect and not central. Our group has made use of the insulin or hypoglycemic state in indicating whether or not we had sectioned all of the vagus. A troublesome feature that we encounter is the delay in emptying time of the stomach—this manifests itself not only in those with slight occlusion of the pyloris but in all of the cases. One we feel sure changed from five hour retention to three hour with the use of belladonna and phenobarbital. All our cases have shown improvement clinically, 1 gaining as much as 42 pounds (19 Kg.) and a second becoming free from troublesome duodenal hemorrhage. Dragstedt points out a way to make use of gastroenterostomy —a procedure that has nearly been discarded. The authors are showing us a good procedure. It may fail to do all that is necessary in every case. With section of the vagus we shall see cases that will lend themselves to gastroenterostomy that otherwise would develop the marginal ulcer.

Dr. A. C. Ivy, Chicago: This contribution is important for at least two reasons. The data indicate that the vagus nerves may be concerned in the etiology of peptic ulcer in man and that the hypercontinuous secretion of gastric juice observed in the majority of patients with an active duodenal ulcer may be affected by vagus section. In addition, the observations increase our knowledge of the effect of the vagi on the stomach of man. A study of the paper suggested that the increased night secretion, which returned toward the normal state after bilateral vagotomy, might be due to the administration of alkalis, which were withdrawn after the operation. It is quite clearly established, in my opinion, that alkaline powders produce what is termed a "rebound secretion" in some patients. Dr. Dragstedt has informed me, however, that most of the patients had not received alkaline powders for several days before the test. The cause of the hypercontinuous secretion which disappeared after vagotomy is of considerable interest from the psychosomatic and physiologic points of view. The fact that the patients did not respond well to sham feeding before vagotomy, even though the meal might have been more attractive, suggests that the appetite mechanism for gastric secretion was not hyperirritable. Several years ago I studied appetite secretion in 6 normal subjects by the use of an indwelling tube. Only 1 responded to the sight of frying and smelling a beefsteak; this subject and 4 others responded to tasting and chewing the beefsteak; and the 6th who did not respond to tasting and chewing, was upset by the process of expectoration. When food is chewed and tasted, two reflex mechanisms for gastric secretion are excited. One is an unconditioned reflex, like the secretion of saliva to acid in the mouth, and the other is a conditioned reflex dependent on learning, which is a reaction to "anticipatory thinking." It would seem that if either of these two mechanisms were hyperirritable in the ulcer patient, more than 3 of the 10 patients would have shown a good response to sham feeding. Necheles and Maskin (*Am. J. Digest. Dis.* **3**:90 [April] 1935) found only a slightly greater secretion in response to sham feeding in 34 ulcer patients as compared to 35 normal subjects. Wolf and Wolff (Human Gastric Function, Oxford University Press) in their subject with a gastrostomy observed increased secretion in the presence of internal conflict, resentment and anxiety even when the subject had no appetite. This indicates that such emotional states do not operate to increase secretion via the appetite mechanism. The response of the authors' patients to insulin before vagotomy was not any greater than that of Ihre's normal human subjects (Ihre: *Acta med. Scandinav.*, supp. 95, 1938). Hence the mechanism on which insulin hypoglycemia operates was apparently not hyperirritable in the author's patients. Unfortunately it is not known on what centers in the brain insulin hypoglycemia acts to stimulate secretion. It may act on some center above the vagal secretory cells in the medulla; for example, on the anxiety mechanism of Wolf and Wolff. The possibility that the hypersecretion is due to a reflex arc the sensory and motor limbs of which reside in the vagi should be considered. This possibility does not require a hyperirritable center at the level of the medulla. Such a reflex mechanism for influencing the motility of the stomach exists in the dog. For example, a duodenal ulcer increases the "tonic motility of the stomach" (type 2 and 3 contractions); this type of motility is abolished by vagus section (Ivy, A. C.: *Arch. Int. Med.* **25**:6 [Jan.] 1920). All of the physiologic vagal mechanisms for gastric secretion can be completely annulled by atropine. The hypernormal interdigestive secretion in peptic ulcer patients cannot be abolished by ordinary doses of atropine. Therefore if this hypersecretion is due to a vagal mechanism it is some abnormal type of vagal effect which is unaffected by atropine unless the factor of the dosage required is concerned. Nevertheless, vagotomy should obviously be more effective than atropine in abolishing the normal or abnormal action of the vagi. Bilateral vagotomy, because it abolishes the cephalic phase of gastric secretion, normal or abnormal, and reduces or abolishes "tonic motility," normal or abnormal, should favor the healing and prevention of recurrences of peptic ulcer. The degree of correctness of this statement depends on whether the stomach of man is like that of the dog and particularly the rabbit, animals which sometimes develop gastric ulcer spontaneously after bilateral vagotomy (Beazell, J. M., and Ivy, A. C.: *Arch. Path.* **22**:213 [Aug.] 1936. Meek, W. J., and Herrin, R. C., *Am. J. Physiol.* **109**:221 [Aug.] 1934).

Dr. Lester R. Dragstedt, Chicago: I wish to express my sincere appreciation to the men who have taken part in this discussion and who have thereby contributed so much to the problem under consideration. It is especially pleasing that our observations have been so largely confirmed. I should like to emphasize the point that these findings are in harmony with the concept that gastroduodenal ulcer is a psychosomatic disease. Presumably the tensions and strains of modern life produce aberrant activity in the central nervous system and this, in turn, leads to abnormally great secretory and motor tonus in the vagus nerves. An increased secretion of gastric juice in the empty stomach becomes then the objective evidence of this central nervous system disturbance which is at the basis of ulcer disease. These facts provide a challenge to the students of psychoanalysis to employ the technics of their discipline in the treatment of patients with duodenal ulcer guided by the effects of their procedures on gastric secretion, which is subject to quantitative measurement. The clinical results of vagus section in patients with gastroduodenal ulcer have thus far been so satisfactory and the physiologic concepts back of the operation so appealing that I feel even at this early date (the oldest patient was operated on not quite three years ago) warranted in recommending transthoracic section of the vagus nerves as a substitute for subtotal gastrectomy in the treatment of duodenal, gastrojejunal and proved gastric ulcers. When definite obstructive symptoms are present the operation should be combined with gastrojejunostomy or gastroduodenostomy, and in this case the division of the vagus nerves may be done beneath the diaphragm.

TREATMENT OF SCARLET FEVER

LIEUTENANT COMMANDER PAUL ASHLEY (MC), U.S.N.R.

Two hundred and ninety-eight consecutive patients with scarlet fever admitted to this activity during June and July 1945 were observed for (1) the degree of toxemia on admission, (2) the type of streptococcus present in the throat, (3) the response to various methods of treatment and (4) the incidence and types of complications. The patients were grouped according to treatment methods, and comparable groups were made up of alternately admitted patients. All patients were free from complications when admitted, and the rash had been present less than thirty-six hours. All convalescent serum used in these cases was made from blood drawn from convalescent scarlet fever patients on the eighteenth day of the illness.

METHOD OF STUDY

Grouping of Cases and Treatment Used.—Groups A1 and A2: A comparison of convalescent serum and antistreptococcus (horse) serum.

Fifty of the first 99 patients were given 50 cc. of human convalescent scarlet fever serum intravenously on admission (group A1), and 49 were given 10 cc. of antistreptococcus serum (commercial, New York State Health Department) intravenously on admission (group A2). As nearly as possible alternate admissions were selected for each group, but men (5 out of 54 tested) found sensitive by skin test to the antistreptococcus serum were not subjected to desensitization but were assigned to the convalescent serum group.

Groups B1 and B2: A comparison of convalescent serums secured at separated intervals in the epidemic.

Forty-nine of the second 99 patients were given, on admission, 50 cc. of human convalescent scarlet fever serum intravenously which had been prepared six weeks

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or more previously (group B1), and 50 patients were given, on admission, 50 cc. of human convalescent scarlet fever serum which had been prepared within the previous week from patients who were about to go to duty. The serum used in group B1 was drawn from a group of convalescent scarlet fever patients from whose throats the percentages of streptococci listed in table 1 were cultured. This serum is hereafter referred to as "old" serum.

TABLE 1.—*Sources of Old Serum*

	Type of Group A Streptococci		
	3	17	19 + ANCT*
Present in this percentage of patients	2.	37	36

* This abbreviation designates those group A streptococci which are "not common types."

TABLE 2.—*Sources of New Serum*

	Type of Group A Streptococci		
	3	17	19 + ANCT
Present in this percentage of patients	11.6	36.6	50

The serum used in group B2 was drawn from a group of convalescent scarlet fever patients from whose throats the percentages of streptococci listed in table 2 were cultured. This serum is hereafter referred to as "new" serum.

Groups C1 and C2: A comparison of convalescent serum with and without penicillin as additional treatment.

Fifty of the third series of 100 patients were given 50 cc. of pooled human convalescent scarlet fever serum intravenously on admission (group C1), and 50 were given 50 cc. of *pooled human convalescent scarlet fever* serum intravenously on admission, penicillin 30,000 units on admission and penicillin 15,000 units every *three hours until the temperature* had been normal for five consecutive days (group C2). It had appeared from previous observations that patients receiving penicillin *on admission* had a smoother course than some apparently less ill who had received only convalescent serum.

TABLE 3.—*Method of Grading*

1 Temperature		2 White blood cell count	
98.6 to 99 F. ..	Grade 1	Below 10,000 .	Grade 1
99 to 101 F.....	Grade 2	*10,000 to 15,000*..	Grade 2
101 to 103 F.	Grade 3	15,000 to 20,000	Grade 3
103 F. and above .	Grade 4	*Above 20,000*	Grade 4
3 *Rash.*		4 Pharyngitis and tonsillitis	
Slight	Grade 1	Slight	*Grade 1*
Moderate	Grade 2	Moderate..	Grade 2
Moderate to intense	Grade 3	Moderate to severe	Grade 3
Intense (with petechiae)..	Grade 4	Severe with edema and exudate	Grade 4
5. Toxic signs:			
One sign	Grade 1		
Two signs.........	Grade 2		
Three signs..	*Grade 3*		
Four or more signs	Grade 4		

GRADING OF TOXEMIA

When each patient was admitted, his (1) temperature and (2) white blood cell count were taken, the (3) rash and (4) pharyngitis and tonsillitis were graded by the admitting medical officer and (5) systemic toxic signs such as nausea, vomiting, *epistaxis,* headache, enlarged cervical lymph nodes, fainting and malaise were noted. Each of these five findings was graded on the arbitrary basis shown in table 3. The grading of numbers 3 and 4 was determined by one medical officer in over 250 of the 298 cases and therefore was *relatively uniform.*

The toxemia of each patient was numerically evaluated *by* averaging the grades of these findings and, in turn, the toxemia of the groups of cases was numerically evaluated by averaging the grades of the component cases.

DETERMINATION OF STREPTOCOCCUS TYPE

At the time of admission and before any treatment was *given, throat cultures* were taken on blood agar plates. Subsequent isolation and typing were done by the local epidemiology unit. The typing serums available *were those for types 3, 17 and 19* of group A *plus* the usual grouping serums. Cultures of beta-hemolytic streptococci which were group A but not types 3, 17 or 19 *are classified as group A,* not a common type, or ANCT. There were a few cultures in each group of cases which could not be grouped or typed. They are classified as "positive but no type."

TABLE 4.—*Toxemia on Admission*

Group	A1	A2	B1	B2	C1	C2
Toxemia grade	2.03	1.89	1.8	2.0	1.8	2.1
Relation of comparable groups	A1 7% more toxic than A2		B2 11% more toxic than B1		C2 16.6% more toxic than C1	
Maximum toxemia = 4.0						

TABLE 5.—*Determination of Streptococcus Types*

Throat cultures: Group	A1*	A2*	B1	B2	C1	C2
Type 3.....	3	4	7	9	6	6
Type 17...	11	12	1.	10	9	11
Type 19..	0	0	8	10	15	12
ANCT.....	18	12	6	4	6	5
19 + ANCT ..	18	12	14	14	21	17
Positive no type	5	4	5	3	9	5
Group G. ..	..			1	.	.
Negative.	11	15	10	15	2	4
No culture	2	2			3	4

* *At the time these groups were observed the type 19 serum was faulty and it is believed by the epidemiology unit that at least 50 per cent of the cultures called ANCT were really type 19*

RESPONSE TO TREATMENT

The response to treatment in groups A1, A2, B1, B2 and C1 was estimated on temperature *and* the necessity *for* the use of penicillin. If a patient's temperature dropped to 99 F. or below during the first seventy-two hours and stayed at 99 F. or below forty-eight hours or more, and if his *condition* had not necessitated administration of penicillin during the first seventy-two hours, he was *considered* as having responded well to the treatment. If the temperature persisted above 99 F. for more than seventy-two hours or if *his condition necessitated* the administration of penicillin during *the first* seventy-two hours, he was considered as having responded poorly to the treatment.

In group C2 the response to treatment was estimated on the temperature and the necessity for the *administration of penicillin* longer than ten days. If a patient's temperature dropped to 99 F. or below during the first seventy-two hours, and *if* his *condition did not* necessitate the use of penicillin in unusual amounts or for more than ten days (to satisfy the policy of giving penicillin until the temperature had been *normal* for five days), he was considered as having responded well to the treatment. If a patient's temperature persisted above 99 F.

for more than seventy-two hours or more than a standard amount of penicillin was needed. he was considered as having responded poorly to the treatment.

Any systemic reactions to the convalescent serum or antistreptococcus serum in groups A1 and A2 were noted in order to compare untoward effects of the two substances.

COMPLICATIONS DEFINED

The following were considered complications:

Fever above 99 F. for a consecutive period of forty-eight hours or over for which no cause could be found and which appeared after the temperature had dropped below 99 F. and remained below 99 F. for forty-eight hours or more.

Pharyngitis or tonsilitis which appeared within the first five days of the disease but after the temperature had been 99 F. or below for forty-eight hours.

Cervical adenitis which became accentuated after the patient had initially responded well to treatment.

Lower respiratory infections such as pneumonia, bronchitis and pleurisy.

Otitis media, acute, with or without drainage.

Sinusitis, acute, which could be identified to the satisfaction of the medical officer by a sufficient number of the following signs and symptoms: nasal obstruction and/or drainage, fever, pain in one or more sinuses, tenderness on pressure or percussion over one or more sinuses, orbital cellulitis, or erysipelas of the face associated with other signs of sinus infection.

Rheumatic fever which could be conclusively diagnosed by adequate combinations of major and minor symptoms.

Table 6.—*Group A Streptococci and Type Percentages*

Group	A1	A2	B1	B2	C1	C2
Total cases	32	28	34	33	36	37
Type 3	9.4%	14%	20.6%	27%	17%	16%
Type 17	34%	43%	39%	33%	25.6%	38%
Type 19 + ANCT	56%	43%	40.4%	40%	57.4%	46%

Table 7.—*Response to Treatment*

Group	A1	A2	B1	B2	C1	C2
Patients	50	49	49	50	50	50
Good response	27	36	36	19	30	40
Poor response	23	13	13	31	20	10
Toxemia grade	2.03	1.89	1.8	2.0	1.8	2.1

Patients who developed pharyngitis or tonsillitis after the fifth day and who had responded well to the initial treatment were considered to have become cross infected.

RESULTS

The total number of patients harboring group A streptococci in each group and the type percentages were as shown in table 6.

Group C2 patients responded better to the treatment than any other group and considerably better than the comparable group C1. It should also be noted that group C2 patients were 16⅔ per cent more toxic than those in group C1. In view of this toxicity the better response of group C2 to the treatment assumes greater meaning. Although a comparison of the treatment response in group C2 to that in any other group except C1 is not quite accurate, it does seem significant that though the toxemic grade for C2 was higher than any other group the response to treatment was consistently better.

The response to treatment is roughly proportional to the grade of toxemia on admission in all groups except C2.

There were three reactions to the administration of the convalescent serum in group A1, and all were of mild degree. There were thirteen reactions to the administrations of the antistreptococcus serum, and five of these were severe, with further elevation of an already high temperature.

Table 8.—*Complications*

Group	A1	A2	B1	B2	C1	C2	Total	% of Total
Patients	50	49	49	50	50	50	298	
Fever only	3	5	..	5	5	1	19	6.3
Pharyngitis and tonsillitis	1	2	..	1	..	..	4	1.3
Cervical adenitis	4	1	2	2	2	..	11	3.6
Lower respiratory infections	5	3	1	1	1	..	11	3.6
Otitis media, acute	1	3	1	1	2	1	9	3.0
Sinusitis, acute (orbital cellulitis and erysipelas)	9	1	5	5	2	2	24	8.0
Rheumatic fever	1	..	4	4	1	1	11	3.7
Total complications	24	15	13	19	13	5	89	29.5
Percentages having complications	48	30.6	26	40	26	10	29.7	
Cross infections	4	1	1	0	1	1		
Toxemia grade	2.03	1.89	1.8	2.0	1.8	2.1		

The relative incidence of complications is in proportion to the toxemia on admission in all groups except C2.

CORRELATION OF TYPE INCIDENCES IN CONVALESCENT SERUM AND RESULTS OF TREATMENT

The sources of the two serums used in groups B1 and B2 had the type incidences in the total number of patients having group A streptococci as noted in tables 1 and 2, and groups B1 and B2 themselves had the type incidences in the total number having group A streptococci shown in table 9.

The incidence of type 3 beta-hemolytic streptococci in the source group for the old serum was slightly (2.4 per cent) greater than it was in the group B1 patients who received it. The incidence of type 3 beta-hemolytic streptococci in the source group for the new serum was much (15.4 per cent) less than it was in the group B2 patients who received it. The incidence of type 19 ANCT in the source group for the new serum was moderately (10 per cent) greater than it was in the group B2 patients who received it. There was no appreciable difference in the incidence of type 17 in the source groups for the old and the new serum and in the group B1 and B2 cases. There was also no appreciable difference in the incidence of type 19 + ANCT in the source group for the old serum and the group B1 cases.

Table 9.—*Type Incidences in Groups B1 and B2*

	Source of Old Serum	B1	Source of New Serum	B2
Total group A streptococci	338	34	60	36
Type 3	25%	20.6%	11.6%	27%
Type 17	37%	39%	36.6%	33%
Type 19 + ANCT	36%	40.4%	50%	40%

Table 10.—*Recovery of Beta-Hemolytic Streptococci*

	Group B1			Group B2		
	Type 3	Type 17	Type 19 + ANCT	Type 3	Type 17	Type 19 + ANCT
Total cases	7	13	14	9	19	13
Cases giving poor response	1	5	3	8	7	5
Cases giving complications	0	5	3	1	3	6

Table 10 shows the number of times each type of group A beta-hemolytic streptococci was recovered from groups B1 and B2 and the cases of each type which gave poor response to treatment and those which presented complications.

It is noteworthy that in the patients harboring type 3 streptococci the convalescent serum called new was much less effective in evoking a good treatment response than was the convalescent serum called old. Table 9 gives the incidence of type 3 streptococci in the source of the new serum. There are no other trends indicating type specificity of the convalescent serum in these results.

No correlation between the type of streptococci recovered from the throats of these patients and the occurrence of complication can be demonstrated in a study of individual records.

COMMENT

It would be highly desirable to use convalescent scarlet fever serum of known antibody titer. Until practical methods of determining this titer are developed, care should be taken that the source of the serum is bacteriologically similar to the group of patients receiving it.

During an epidemic or endemic of scarlet fever, repeated determination of the predominant types of streptococci present is important so that the therapeutic susceptibility of these organisms can be estimated once or twice each week.

It is dangerous and absurd to use the sulfonamide drugs for patients infected with sulfonamide resistant organisms, since numerous severe reactions have been observed leading to prolonged morbidity and occasionally permanent damage to the patient. Fever and toxic signs from administration of sulfonamide drugs frequently cloud the clinical picture and make evaluation of the course of the disease difficult. Furthermore, rashes from sulfonamide drugs (and other "innocuous" preparations such as A. P. C. Tabs) are frequently confused with scarlet fever during an epidemic. This makes prolonged and at times injurious observation necessary by the contagious disease section of a hospital in order to prevent errors in diagnosis and grouping of patients.

In general the patients seen during June and July 1945 had a milder form of the disease than those seen at the height of the epidemic in March and April 1945.

SUMMARY

The degree of toxemia of scarlet fever varies greatly; therefore the toxemic state of the patient is not an indication for or against the diagnosis.

Fifty to 60 per cent of the cases of scarlet fever seen here during June and July 1945 were caused by group A beta-hemolytic streptococci types 3, 17 and 19. Since these types were persistently sulfonamide resistant in laboratory tests, the use of sulfadiazine in treatment of these patients was contraindicated.

The response to treatment of scarlet fever with convalescent scarlet fever serum alone was roughly proportional to the degree of toxemia on admission and was not satisfactory.

The response to treatment of scarlet fever with convalescent scarlet fever serum plus penicillin is much better than that with convalescent serum alone or antistreptococcus serum alone, regardless of the severity of the illness as interpreted by the numerical evaluation of the toxemia. The response to the treatment of scarlet fever with antistreptococcus serum was better than that with convalescent serum in this study, but when the difference in the calculated toxemia of the groups is considered the difference in response assumes less significance. In view of the work of Rothbard (to be published) concerning the higher titer of antibodies in convalescent serum drawn on the thirty-fifth day, it would be valuable to compare the antistreptococcus serum with convalescent serum drawn at the later date. The response to the treatment of scarlet fever with convalescent serum alone is better when the streptococcus type incidence in the source group for the convalescent serum is similar to that of the group treated. Immediate reactions to the intravenous administration of antistreptococcus serum (derived from horses) was much more frequent than immediate reactions to the intravenous administration of convalescent serum. The incidence of complications in scarlet fever treated with convalescent serum alone or antistreptococcus serum alone was roughly proportional to the toxemia on admission.

The incidence of complications in scarlet fever treated with antistreptococcus serum alone was considerably less than that with convalescent serum alone, but when the difference in toxemia of the groups is considered this difference in complications assumes less significance. The incidence of complications in scarlet fever treated with convalescent serum plus penicillin was much less than that in patients treated with convalescent serum or antistreptococcus serum alone, regardless of the toxemia on admission.

A study of individual records in this series indicates that the incidence of rheumatic fever as a complication of scarlet fever has no relation to the toxemia on admission or the type of organism present in the throat during the initial stages of the scarlet fever. There was no correlation between the complications and the type of streptococcus present in the throat during the initial stages of the scarlet fever.

CONCLUSION

Human convalescent scarlet fever serum intravenously administered 50 cc. or more (depending on the toxemia) within twenty-four hours of the appearance of the rash, together with penicillin 30,000 units intramuscularly on admission and 15,000 units every three hours until the temperature has been normal for five days, is the treatment of choice for scarlet fever indicated by this study.

American Animal Psychology.—Perhaps the most impressive contribution of the early postwar period of World War I was the great fund of evidence derived through research on the developmental aspects of behavior and the genesis of behavior patterns. This trend toward a dynamic theory of animal personality led not only to searching out the nature of ontogenetic behavior changes in many animals from the early embryonic stages but also to special investigations of "native" factors in behavior. This work has continued in many laboratories, with real progress toward clarifying the problems of adaptive behavior. Unfortunately in recent years, with increasing emphasis on the intensive investigation of adult behavior patterns, there has been a swing away from interest in the genesis of individual behavior. There is however an underlying tendency in American animal psychology to give ontogeny its due, and it may well be that a resurgence of this important factor in the earlier development of the field will account for important postwar metamorphoses. Perhaps through such changes in the coming years animal psychology may at length graduate to the status of "comparative psychology."—Schneirla, T. C.: Ant Learning as a Problem in Comparative Psychology, in Twentieth Century Psychology, New York, Philosophical Library, 1946.

AN UNUSUAL LICHENOID DERMATOSIS

CAPTAIN LAWRENCE C. GOLDBERG
Medical Corps, Army of the United States

Never before in the history of dermatology have there been so many people affected with lichenoid lesions as there have been in the South Pacific Theater of War and other allied areas. Hundreds of individuals have been returned to the Zone of Interior with this cutaneous disorder and hundreds still remain there. Those who have seen the disease both in that area and in the United States are immediately struck with the fact that, though many of the lesions are typical of hypertrophic lichen planus, in many respects the disease is entirely different from any type heretofore described. Despite the doubts in the mind of some as to the common basis of the lesions, there is no question (fig. 1) that the distribution of many of these lesions are the same. They affect the mucous membranes in the same way and are associated with the same identical pruritus, but they appear to be less orderly and of a wider nature. Clinically, as well as geographically, these lesions are exotic.

This unusual dermatosis presents itself in three different phases. So variable are its clinical manifestations that numerous and varied diagnoses are suggested both early and late.

(*a*) *Dermatitis Phase* (fig. 2).—The patient, as a rule, states that at first areas of erythema with small pruritic pustules have been seen on the dorsum of the feet, hands, forearms and legs. These remain for varying periods of time and are often treated with some type of lotion or salve. Following this initial state, one or two things happens: Either discrete verrucous and papulosquamous lesions or an exfoliating dermatitis develops.

(*b*) *Exfoliating Dermatitis Phase.*—The patients seen in this phase are extremely ill, usually having low grade to definite fever, loss of appetite and pronounced loss in weight. The skin is scaling and weeping from the top of the head to the bottom of the feet; the lymph glands are greatly enlarged and a foul odor is present. (I have never seen any of these patients die, but death has occurred, and on admission to this hospital several have been placed on the seriously ill list.)

(*c*) *Lichenoid Phase.*—It is at this time that the lichenoid lesions similar to hypertrophic lichen planus arise, and these can be seen on almost any part of the body, though certain areas are more severely affected than others. The lesions are very prominent on the flexor surfaces of the arms, the inner aspects of the thighs, the buttocks and the dorsum of the hands and feet. The type of lesion is for the most part similar to the hypertrophic type of lichen planus rather than to the polygonal umbilicated papulosquamous lesions so aptly described by Erasmus Wilson almost a century ago. I have never seen a classic lichen planus papule with Wickham's striae in an original case. Such a lesion has been seen, however, in 3 relapsing patients, all of whom had been in this country six months or more after returning from the Pacific areas and India. The lesions are a deep purple red, which in many instances deepens as treatment progresses Again differing from the usual lichen planus, this disease more conspicuously affects the face, especially the eyelids and ears. As it subsides the definite erythema ab igne appearance of the eyelids is seen. This becomes so striking that after one has seen a number of cases the diagnosis of lichenoid dermatitis is immediately suggested on seeing the patient's eyelids. The axillary, pubic and perianal areas are often involved and commonly weep, thus leading to secondary infection, with resulting confusion in diagnosis. The elbows and knees are similarly affected, so that oftentimes a casual glance could easily lead to the diagnosis of psoriasis vulgaris. Later the lesions become either pigmented or depigmented, depending on the reaction of the individual. The deeply pigmented lesions which appear on the face, arms and legs are strongly suggestive of a grouped pigmented syphiloderm (figs. 3 and 4) and have so been called. Again the pigmentation may be so generalized and the lesions so verrucoid that the possibility of Darier's disease, urticaria pigmentosum, and even acanthosis nigricans has been suggested. Some of the lesions assume polycyclic and orbicular forms on the body and extremities and to the uninitiated look like tinea corporis. The depigmented areas may coalesce and strange and bizarre appearances result (fig. 5).

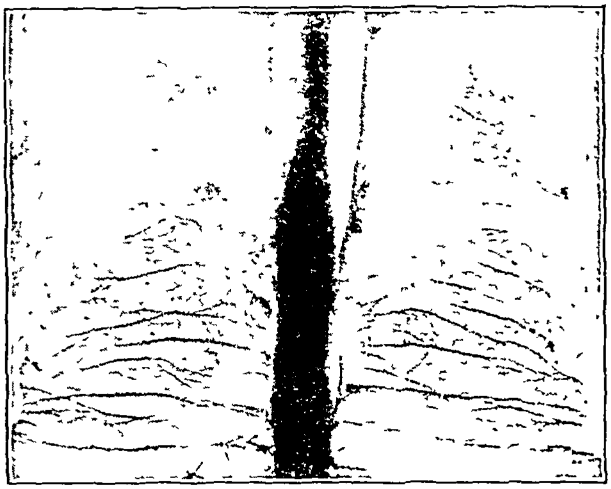

Fig. 1.—Lichenoid lesions involving the wrists

The mucous membranes of the mouth (fig. 6), lips, penis and vulva are definitely affected, and lesions have been present in these areas in 12 of the 60 cases. Since the eruption was so wild in its nature, it seemed likely that proctoscopy[1] and gastroscopy might reveal further involvement. A large number of these cases were examined, and the most striking lichen planus lesions that I have ever seen on the mucous membranes were present on the rectum in 3 of the 20 cases so studied to date. These occurred on the columns of Morgagni but never in the crypts. They were usually 1 cm. or more above the anocutaneous junction but never in the sigmoid colon. A typical description of these lesions was presented as follows:

> External examination. The perianal region is covered with confluent and discrete lesions which are consistent with lichen planus There is a chronic anal ulcer in the posterior commissure There is no evidence of fistula, external hemorrhoids or pilonidal sinus.
>
> Digital: Sphincter tone is normal. The prostate is normal in size and shape. The rectal mucous membrane is smooth.

From the Oliver General Hospital, Augusta, Ga

Pfc John H MacDonald photographed the patients

Col Hew B McMurdo M C, commanding officer, Oliver General Hospital, and Col Arthur N. Ferguson M C, chief of medical service, cooperated in making this study possible

[1] The proctoscopies and gastroscopies were done by Major Jack S. Goltman, M C, A. U S

Anoscopic: There are no internal hemorrhoids. The rectal columns on the anterior and lateral walls show a grayish white mucosal alteration which has the appearance of an artificially appliqued material. This does not wipe off or bleed when swabbed with an applicator. The lesion begins at the pectinate line and extends along the column, but not into the crypts, for a depth of 1.5 cm.

Proctoscopy: Long instrument passed full length. There are no lesions above the terminal rectum. Vascular markings are distinct.

To date no lesions have been found in the stomach by gastroscopy. Reexamination of some of these patients showed complete clearing of the lesions following treatment.

Occasional cases were associated with alopecia and, because of pyogenic infection of the scalp, presented a varied and sometimes bizarre appearance. The palms and soles (figs. 7 and 8) were frequently involved; over 75 per cent of the cases showed lesions of the nails. One of the most typical findings was the scaling débris beneath the terminal end of the nails, which was often so thick that they were raised from their beds. There were also numerous pitted and lusterless areas of the nails similar to and at times indistinguishable from those often seen in psoriasis vulgaris. Occasionally subungual raindrop pigmentation was seen. In the more severe cases one half to two thirds of the nail was destroyed or had become so brittle that it could be easily removed.

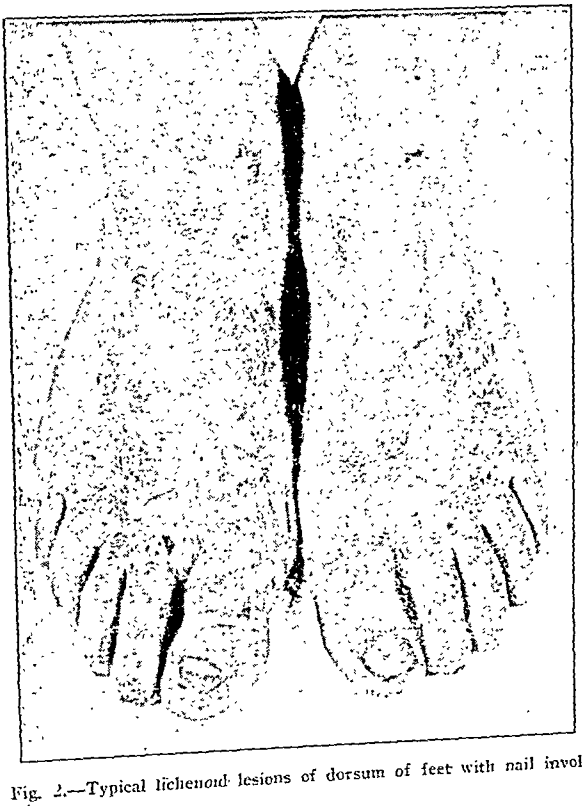

Fig. 2.—Typical lichenoid lesions of dorsum of feet with nail involvement.

ETIOLOGY

The most interesting question that immediately suggests itself is Why is this disease so common in the South Pacific and climatically similar areas but so uncommon in the other theaters of war? The same kind of people are fighting and the war is just as intense in the Euorpean theater as in the Pacific. Sir Graham Little[2] stated that MacCormack, in charge of a large base hospital for skin diseases in World War I, found lichen planus extremely rare and not increased in the military or civilian population. He did state, however, that prior to the war he had seen numerous instances of the disease following scratch marks and wounds. The latter statement is pertinent, as will be seen, to a consideration of some of the cases in the South Pacific. In a report covering over 2,000 dermatologic cases among soldiers in World War I, Guy[3] found only 1 instance of lichen planus.

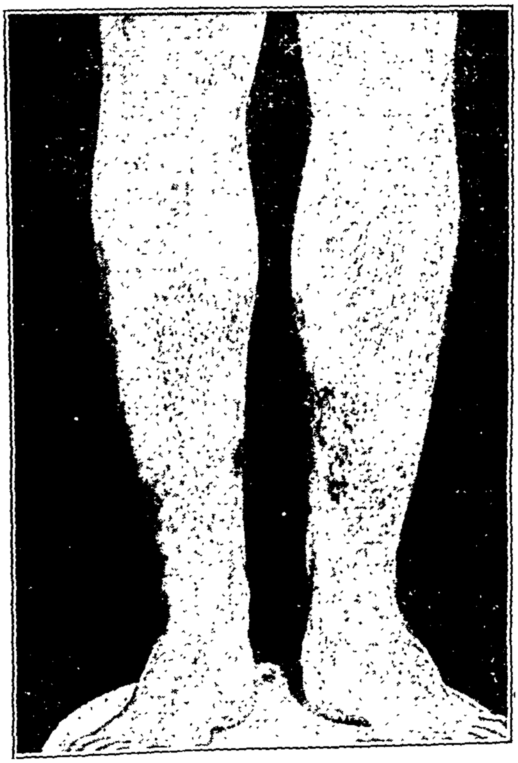

Fig. 3.—Grouped pigmented lesions resembling a grouped pigmented syphiloderm.

The question of drug idiosyncrasy arises, and one must consider atabrine, used by hundreds of thousands in the Pacific Theater of War as well as in other areas. It has been shown by observers that atabrine is capable of producing skin reactions, as in the interesting reports by Noogin and Calloway,[4] Nayudu[5] and Storey.[6] In none of these patients were lichen planus-like lesions found, but severe exfoliating dermatitis was described. Lichenoid lesions such as those described earlier in this paper, have been known to occur in drug eruptions caused by arsenic, bismuth and bromides, so that the thought that atabrine might cause this unusual dermatosis is not improbable. I have been unable to reproduce these lesions, however, in the cases observed and treated by suppressive or intensive therapy with atabrine. All these were maintained on suppressive atabrine therapy while they were being treated, and in no instance did any new lesions appear while under observation. It is true, however, that some of the hypertrophic lesions would weep, but this could readily have been a reaction to local treatment even though it was mild, because the skins of many of these patients were extremely sensitive. Several patients developed their first attacks of malaria or relapsed while in this hospital and were treated with intensive atabrine therapy, but there was no aggravation of their skin lesions. One patient in particular, with severe exfoliating dermatitis plus his lichenoid lesions, has been observed for eight months, during which time he has been receiving continuous suppressive atabrine therapy; he has recovered except for scattered sepia brown pigmentation. Patch and intradermal tests with atabrine were done in a few of these patients and all were found to be negative. No passive transfer tests were made.

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[2] Little, E. Graham: Lichen Planus, J. Cutan. Dis. 37:639 (Oct.) 1919.

[3] Guy, W. H.: Dermatology in the Army, J. Cutan Dis. 37:245 (April) 1919.

[4] Noogin, R. O., and Calloway, J. L.: Generalized Exfoliating Erythroderma Following Atabrine: Report of a Case, North Carolina M. J. 3:239 (May) 1942.

[5] Nayudu, R. V. N.: Malaria and Its Treatment by Synthetic Remedies Atabrine and Plasmochin, Indian M. Gaz. 72:531 (Sept.) 1937.

[6] Storey, W. E.: Toxic Exanthema Following Prolonged Atabrine Administration and Resembling Brill's Typhus Fever: Report of Case, J. M. A. Georgia 27:317 (Aug.) 1938.

Two patients developed severe otitis media and 1 a virulent Vincent's infection of the throat with definite flare-up of the skin lesions after sulfonamide therapy. This suggests to some extent a pyogenic or allergic background. Although atabrine may be a definite causal factor or an agent that prepares the soil, more evidence will have to be uncovered before it can be pinned down as the exclusive and certain etiologic factor. It is quite possible that even if atabrine is a cause of this cutaneous disorder the classical geographic sites such as New Guinea and Burma and similar areas may provide other necessary factors. It may be of value to examine a large number of natives in typical geographic areas where lichenoid lesions have been found to be prevalent and note whether they have or have had similar eruptions. Future study will undoubtedly answer the question whether this is true sensitivity to the drug or a toxic effect related to the amount ingested.

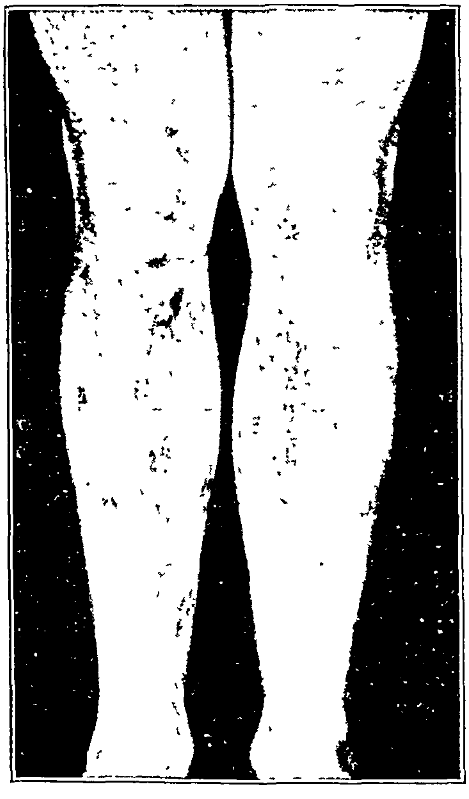

Fig. 4.—Grouped pigmented lesions resembling a grouped pigmented syphiloderm.

Malnutrition must also be considered as a possible etiologic factor. The only patients that showed loss of weight and poor general health were those in the exfoliating phase, a nonspecific effect. It was striking that practically all the patients in the lichenoid phase of the disease were well nourished. Nevertheless the fact that they were not receiving fresh vegetables and were on rationed diets may be significant.

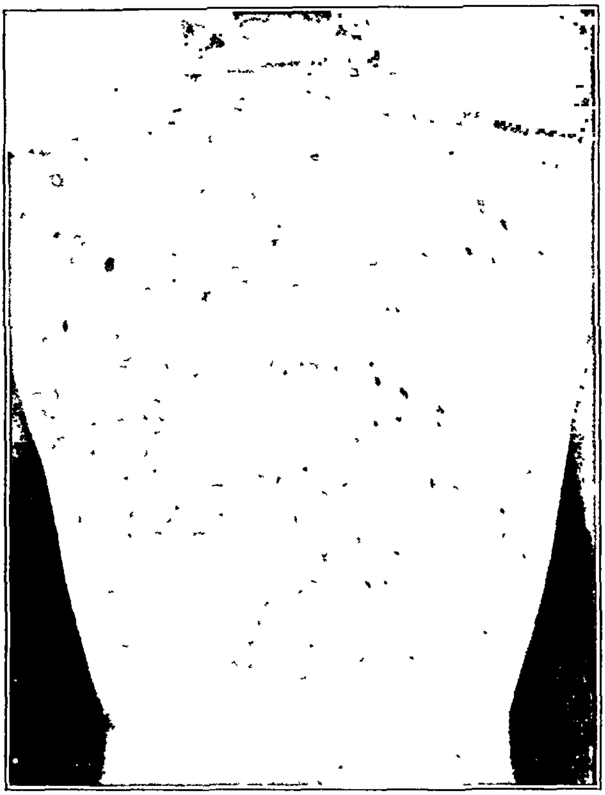

Fig. 5.—Typical depigmented lesions.

Since the eruption is common on the face and dorsum of the hands, the possibility of light sensitivity should be considered, particularly in view of the relation between light sensitization and infection. To some extent the pigmentation of the skin caused by atabrine may even protect individuals from the sunlight—an interesting possibility deserving further study.

The reported small incidence of lichen planus in World War I would at first glance tend to minimize an emotional or neurophysiovascular mechanism as the cause of this unusual dermatosis. All types of people have been affected: combat soldiers, general staff officers, doctors, nurses, Wacs and soldiers doing routine tasks in no way associated with active combat duty. Many of these cases were from New Guinea, Biak and Morotai, where there had been beach landings, invasions and heavy battle casualties. When one considers that this environment is totally different from that ever experienced by the military personnel transported here, away from their conditoned civilization and in stations where the sexes have been isolated from each other, the possible emotional etiology appears more significant. The nature of the weather, its rain and constant humidity, the mud, the jungle with its "routine diet" of trees and underbrush and its almost total isolation from the rest of the world increasingly suggest a large emotional factor. Virtually every patient affected with this dermatosis as seen here had severe hyperhidrosis of the palms and soles—a disturbance long known to be associated with neurophysiovascular imbalance. Some of those affected by this eruption are said to have anhidrosis at the start of their disease, but this symptom has as yet not been observed here. In addition, there is the added factor of infection caused by scratches, infected bites, wounds, ulcerations, the ever present miliaria with its pruritus and impetiginization, and countless other emotionally disruptive factors. As the soldiers say, "practically every one has jungle rot in New Guinea."

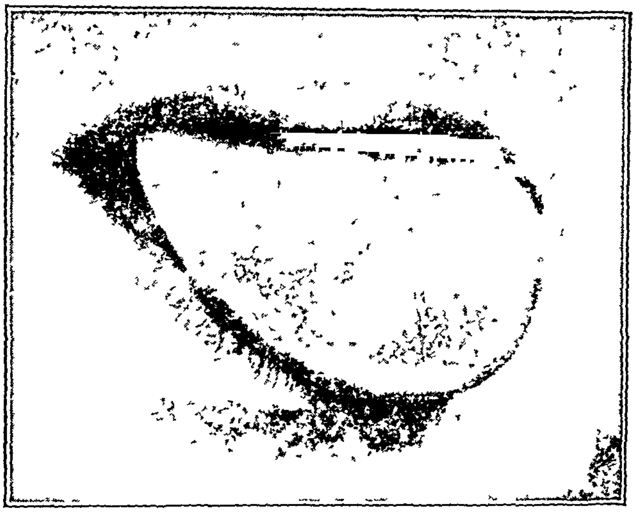

Fig 6—Lichen planus like lesions of the tongue which disappeared after four injections of 0 02 Gm of oxophenarsine hydrochloride

MINUTE STRUCTURE

Biopsies of several lesions were examined microscopically and in general showed the changes similar to those often seen in lichen planus. One interesting finding was an increased pigmentation in the corium in the pigmented type of lichen planus. In 1 instance a lymph gland from such a case was examined and pigmented granules were seen throughout the stroma.

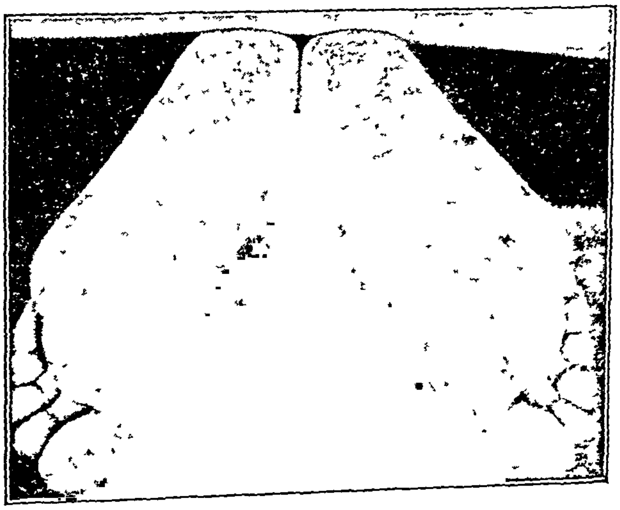

Fig 7.—Lichenoid lesions of the heels

LABORATORY DATA

Routine laboratory studies revealed no specific findings. There were occasional increases in the eosinophils, but this is not uncommon in patients returning from the Pacific. None of the patients showed blood findings that were compatible with hemopoietic change, and in the few cases that were examined for hepatic pathologic change none was found. No false biologic reactions were noted. Sedimentation rates by the Wintrobe method were elevated in 70 per cent of the patients with eczematous lesions and in all of the exfoliating cases.

TREATMENT OF THIS DERMATITIS

The treatment of this eruption will vary according to the phase of the disease.

(*a*) *Treatment of Dermatitis Phase.*—Since I treated all these cases in the Zone of the Interior, the dermatitis phase offered no great problem because of its infrequency. The skin of these patients, it was seen, was extremely sensitive, so that even the mildest substances were irritative. For this reason treatment had to be individualized. The salves and lotions used were in all instances very mild and when applied were covered with bandages which were not removed for twenty-four hours unless unfavorable reactions had occurred.

(*b*) *Treatment of Exfoliating Phase.*—In general the exfoliating cases were treated by the usual methods employed in any exfoliating dermatitis.

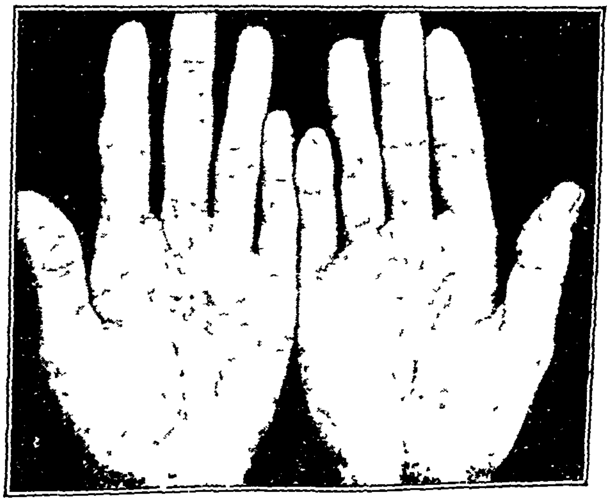

Fig 8—Lichenoid lesions of the palms

1. Continuous local wet dressings were used. Potassium permanganate in 1:5,000 dilution was the drug of choice The dressings were applied over the entire body if necessary; they were then covered with towels which were fastened with safety pins This form of therapy was usually continued day and night until the oozing, weeping and secondary infection had been controlled.
2. Sulfonamides were never used.
3. High caloric diets were given with added vitamin medication. Crude liver extracts in 2 to 5 cc doses were given intramuscularly either every day or every other day as indicated Amino acids were given orally in large amounts.
4. Colloid baths were made up of cornstarch and baking soda if and when the patient was ambulatory.

During this exfoliative phase no specific treatment was administered.

(*c*) *Treatment for the Lichenoid Phase.*—Arsenic in various forms has been used in the treatment of lichen planus for many years. Because of its occasional successes a system of treatment was developed employing an arsenical. Oxophenarsine hydrochloride (Mapharsen) was given in small doses, 0.02 Gm. biweekly. To date 60 patients have been so treated,[7] and in some the results have been excellent (figs. 9 and 10), with involution even after four injections. Most of the patients showed improvement with decreased pruritus between the first and the third injections. The mucous membrane lesions shared in this response, and in 1 case (fig. 6) with a large plaque on the dorsum of the tongue the lesion disappeared after the fourth injection of oxophenarsine hydrochloride.

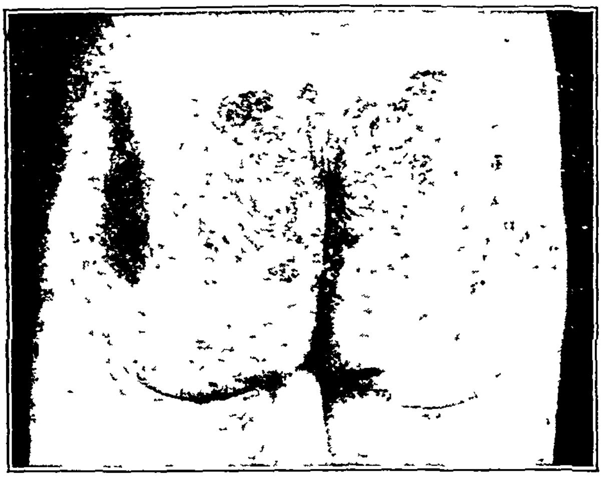

Fig. 9.—Lichenoid lesions of the buttocks of five months' duration.

Although this treatment is admittedly empirical, the encouraging results warrant its future use in the treatment of true lichen planus as well. If successful, such effects as we have seen in our group of cases would be a far cry from the day when White[8] stated that "cure seems to depend largely on natural evolution."

Several of these patients treated with oxophenarsine hydrochloride developed fever ranging from 99.8 to 102 F. about six hours after the first injection, and for this reason the drug had to be discontinued. Although none of these patients had shown any clinical or laboratory evidence of hepatic damage on admission, it was felt that they had a subthreshold hepatitis which was activated by these small doses of oxophenarsine hydrochloride and which might well have been caused by atabrine. Their icterus indexes were definitely raised, and some developed clinical jaundice as evidenced by scleral changes. These reactions subsided in forty-eight to seventy-two hours, during which time the patients suffered nausea and vomiting. This was relieved by the administration of 1,000 cc. of 10 per cent glucose intravenously and the generous use of amino acids by oral administration. Although it appeared that these patients took longer to get well than those who tolerated the oxophenarsine hydrochloride this was a warning that the drug should be used cautiously and discretely, if at all, in treating patients with "exotic lichen planus."

Previous to hospitalization here, many of these patients had received penicillin in large amounts, both intramuscularly and locally, without benefit, except to control secondary infection. Many also had received sulfonamides, both internally and locally, with no real gain and even with occasional harm.

COMMENT AND SUMMARY

This paper deals with a large number of cases of an unusual lichenoid and exfoliating eruption returned because of this disease, to the Zone of the Interior from the South Pacific Theater of Operations and geographically similar areas. The distribution and character of the lesions usually indicated the correct diagnosis. The most common single finding was a hypertrophic erythematopapulosquamous lesion with a tendency toward confluence. At no time was a classic lichen planus papule seen in an early case. The eruption was "exotic" in character and commonly involved areas not usually affected in true lichen planus: i. e. the scalp, eyelids, face, palms, soles and nails. The mucous membranes, genitalia and anal areas were involved in 20 per cent of the cases. Proctoscopy has revealed in 10 per cent of the cases examined appliqued lesions on the columns of Morgagni but not in the crypts. To date gastroscopy has not demonstrated any lesions. Many of the patients responded well to 0.02 Gm. of oxophenarsine hydrochloride given biweekly. These improvements occurred between the first and third injections; in no case were more than ten injections necessary to bring about involution of the lesions.

The pigmentation resulting from the eruption remained for long periods of time. Depigmented types of lesions were unchanged by treatment. Mucous membrane lesions responded promptly, and in 1 case a large plaque on the tongue cleared after four injections of 0.02 Gm. of oxophenarsine hydrochloride. Several of the patients treated with oxophenarsine hydrochloride developed fever, nausea and vomiting about six hours after the first injection of 0.02 Gm., suggesting the association of hepatic damage in these patients easily exacerbated by this drug and very likely first caused by atabrine. Oxophenarsine hydrochloride should be used with great discretion, if it is used, in treating patients with this eruption.

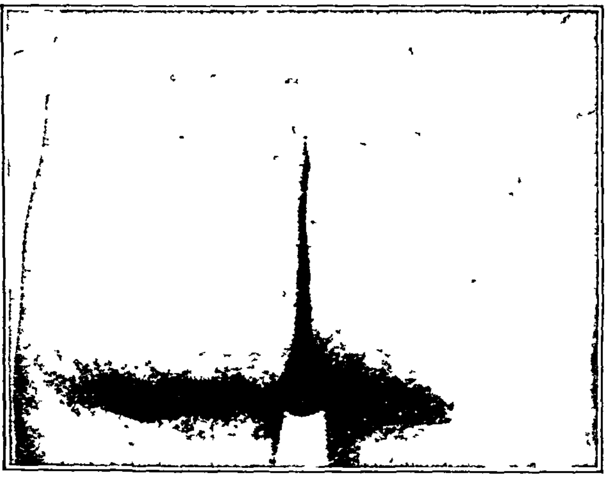

Fig. 10.—Same case as in figure 9 after four injections of 0.02 Gm. of oxophenarsine hydrochloride and ten days after therapy.

Patch and intradermal tests with atabrine when done were found to be negative. No passive transfer tests were made. No false biologic reactions were noted, and in none of the cases in this series were changes in the hemopoietic system found. Sedimentation rates by the Wintrobe method were elevated in 70 per cent of the patients with eczematous lesions and in all the exfoliating cases.

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[7] Since this paper was written, in February 1945, 63 more of these cases have been seen. Of the total of 123 cases, 1 came from North Africa, 4 from India and the remainder from central and northern New Guinea. More recently several soldiers returned from India were found to be afflicted with this unusual dermatosis. *In all those from* India, atabrine had been stopped at the first symptom of the eruption, but it appeared to have progressed nevertheless along with symptoms of pruritus. Twelve of the total of 123 patients were Negroes.

[8] White, C. J.: Lichen Planus, J. Cutan. Dis. 37:671 (Oct.) 1919.

Although the principal purpose of this paper is to describe the unusual features of this perplexing dermatitis, the problem of its etiology excites the interest. Atabrine must be strongly considered, although it caused no exacerbations of the skin lesions when used here as suppressive or intensive therapy for malaria in patients with this disease. The neurophysiovascular mechanism, photosensitivity and infection appear to play roles, as may as yet unknown geographic factors. Notable undernourishment appeared only in the exfoliating cases, which of course is not specific for this disease. Nevertheless, large doses of multivitamin tablets and amino acids were administered in all cases. No definite conclusions could be drawn as to a possible nutritional factor in producing this dermatosis.

EFFECT OF SYNTHETIC LACTOBACILLUS CASEI FACTOR IN TREATMENT OF SPRUE

WILLIAM J. DARBY, M.D., Ph.D., EDGAR JONES, M.D.
and
HOWARD C. JOHNSON, M.D.
Nashville, Tenn.

In recent years the view that no essential differences exist between tropical and nontropical sprue has become acceptable. Hanes[1] has emphasized this point and has further pointed out the relative frequency of reported instances of this disease from the entire United States and from northern Europe. He reports 66 cases of sprue encountered in the Duke University Hospital during a period of eight years. One hundred and fifty-eight cases of pernicious anemia were admitted during this same period, giving a ratio of 1 patient with sprue to 2.5 cases of pernicious anemia.

The fundamental defect in sprue appears to be impaired absorption of various substances from the gastrointestinal tract, whereby a deficiency of a number of factors may be brought about. Various micro-organisms suspected as causal agents in the past have been excluded as playing an etiologic role. The work of Castle, Rhoads and their associates[2] in Puerto Rico did much to evolve concepts of the pathogenesis of sprue. The resemblance of several features of this disease to those seen in pernicious anemia had long been noted. These authors showed that sprue occurred both in patients with and in patients without intrinsic factor in their gastric juice. In the group with intrinsic factor the sprue syndrome was brought about, presumably, by insufficient dietary or extrinsic factor. Analysis of the Puerto Rican diet indicated that a deficiency in extrinsic factor was probably of common occurrence. This is in accord with the occasional observation of response of a patient with sprue to a full diet. The similarity to pernicious anemia was further indicated by the demonstration that the liver of a patient dying of untreated sprue contained no erythrocyte maturating factor. Furthermore, in those patients with sprue who were anemic the bone marrow characteristically showed the megaloblastic arrest typical of that seen in pernicious anemia in relapse. Finally, the glossitis of sprue and the glossitis of pernicious anemia are indistinguishable.

Liver extract effective in the treatment of pernicious anemia has been found to be effective in the treatment of sprue, although the response in the latter disease is often less complete and more liver extract may be required for a given response than in pernicious anemia.[1] Indeed, Hanes[1] found 4 of his 66 cases of sprue to be refractory to even very large doses of liver extract administered parenterally.

Criteria generally accepted for the diagnosis of sprue are glossitis, diarrhea with increased fat in the stools, loss of weight, pigmentation of the skin, macrocytic anemia, moderate leukopenia, impairment of absorption as indicated by a flat oral glucose tolerance curve and vitamin A tolerance curve, a very low serum carotene and a characteristic gastrointestinal pattern on x-ray examination. As mentioned previously, some of these findings may be lacking.

Effective treatment of sprue with liver extract and improved dietary results in improvement in the majority of symptoms and findings. The glossitis is relieved within a few days, and evidence of papillary regeneration is noted a day or so later. The diarrhea usually ceases within a week. Flatulence and other gastrointestinal symptoms are usually controlled promptly. Hematologic improvement is rapid. Glucose tolerance curves become more nearly normal within a few weeks. The changes in vitamin A absorption and in serum carotene values following treatment occur slowly, if at all. Weight gain is rapid and is associated with an almost insatiable demand for food.

There has been described a deficiency syndrome in the monkey which is characterized by anemia, leukopenia, diarrhea, oral lesions, facial edema, weight loss and death.[3] The organic factor(s) required by the monkey to prevent this deficiency disease was differentiated from nicotinic acid, riboflavin and thiamine and was named vitamin M.[4] Vitamin M was found in crude liver extracts and in yeast. Further studies have shown that this essential factor is different from a large group of well recognized members of the vitamin B complex including pantothenic acid, choline, para-aminobenzoic acid, pyridoxine and inositol.[5] Day and his co-workers[6] have recently demonstrated that vitamin M deficient monkeys respond to the intramuscular administration of small quantities of a highly purified Lactobacillus casei factor. It is of interest

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From the Departments of Medicine and Biochemistry, Vanderbilt University School of Medicine.

Dr. Stanton M. Hardy, medical director of the Lederle Laboratories, furnished generous supplies of crystalline synthetic "folic acid" used in these studies.

This study was financed in part by the International Health Division of the Rockefeller Foundation, the Nutrition Foundation, Inc., and the Tennessee Department of Public Health through the Tennessee-Vanderbilt Nutrition Project.

[1] Hanes, F. M.: Sprue, in Tice's Practice of Medicine, Hagerstown, Md., W. F. Prior, Inc., 1943, vol. 4, p. 171.

[2] Castle, W. B.; Rhoads, C. P.; Lawson, H. A., and Payne, G. C.: Etiology and Treatment of Sprue: Observations on Patients in Puerto Rico and Subsequent Experiments on Animals, Arch. Int. Med. 56: 627 (Oct.) 1935.

[3] Day, P. L.; Langston, W. C., and Shukers, C. F.: Leukopenia and Anemia in the Monkey Resulting from Vitamin Deficiency, J. Nutrition 9: 637 (May) 1935. Wills, L., and Bilimoria, H. S.: Studies in Pernicious Anemia of Pregnancy, Indian J. M. Res. 20: 391 (Oct.) 1932. Langston, W. C.; Darby, W. J.; Shukers, C. F., and Day, P. L.: Nutritional Cytopenia (Vitamin M Deficiency) in the Monkey, J. Exper. Med. 68: 923 (Dec.) 1938. Topping, N. H., and Fraser, H. F.: Mouth Lesions Associated with Dietary Deficiencies in Monkeys, Pub. Health Rep. 54: 416 (March 17) 1939. Tomlinson, T. H., Jr.: Oral Pathology in Monkeys in Various Experimental Dietary Deficiencies, ibid. 54: 431 (March 17) 1939.

[4] Day, P. L.; Langston, W. C., and Darby, W. J.: Failure of Nicotinic Acid to Prevent Nutritional Cytopenia in the Monkey, Proc. Soc. Exper. Biol. & Med. 38: 860 (June) 1938. Langston, Darby, Shukers and Day.[3]

[5] Totter, J. R.; Shukers, Carroll F.; Kolson, Jack; Mims, Virginia, and Day, P. L.: Studies on the Relation Between Vitamin M, Xanthopterin, and Folic Acid, J. Biol. Chem. 152: 147 (Jan.) 1944. Day, P. L.: The Nutritional Requirements of Primates Other than Man, Vitamins and Hormones 2: 71, 1944.

[6] Day, P. L., and others: The Successful Treatment of Vitamin M Deficiency in the Monkey with Highly Purified Lactobacillus Casei Factor, J. Biol. Chem. 157: 423 (Jan.) 1945. Day, P. L.; Mims, Virginia, and Totter, J. R.: The Relationship Between Vitamin M and the Lactobacillus Casei Factor, ibid. 161: 45 (Nov.) 1945.

that doses of certain purified liver extracts which were effective in the treatment of pernicious anemia were not effective in the prevention of the nutritional cytopenia in the monkey. Finally, vitamin M deficiency developed in monkeys fed the Goldberger blacktongue producing diet,[7] a diet on which Miller and Rhoads[8] found that pigs lost intrinsic factor from gastric juice and maturating factor from the liver.

The association of diarrhea and dysentery in the monkey with this deficiency has frequently been commented on.[9] The various similarities of vitamin M deficiency in the monkey to the sprue syndrome in man has led us to test the efficacy of the newly synthesized L. casei factor[10] in the treatment of 3 cases of this disease. The rapid clinical and hematologic responses which have followed the administration of this pure synthetic material have been briefly reported elsewhere in preliminary notes.[11] It is our purpose in the present communication[12] to describe these cases in detail and to present additional data obtained during the period of several weeks of observation of these patients. It appears that the response to this single factor has been as complete as is ordinarily experienced following the use of liver extract.

The patients whose courses are described here were maintained throughout their hospital stay on regular ward diets but devoid of organ meats. Patient 3 received no meat products in any form during his hospital course. The crystalline L. casei factor was prepared for injection by dissolving it in distilled water (15 mg. in 3 cc.) by the addition of a minimal quantity of disodium phosphate, and this solution was autoclaved at 10 pounds pressure for fifteen minutes. Fresh solutions were prepared at three day intervals.

The vitamin B complex excretion studies reported were determinations of thiamine (thiachrome procedure), riboflavin (fluorometric method) and N-methylnicotinamide excretion in the urine for a two hour period following oral doses of 5 mg. of thiamine, 5 mg. of riboflavin and 50 mg. of nicotinamide. The vitamin A tolerances were run following a standard oral dose of 200,000 international units of vitamin A.

REPORT OF CASES

CASE 1.—*History.*—A white man aged 51 entered Vanderbilt University Hospital on Sept. 24, 1945 with complaints of sore mouth, diarrhea, weakness and loss of weight over a period of ten months. This had begun rather suddenly, and disability had been progressive. He had lost about 28 pounds (12.7 Kg.) soon after the onset of his complaints; in the four weeks prior to admission he had lost an additional 10 pounds (4.5 Kg.). He had passed five to seven loose stools daily, most of these during the night. The stools were described as white or light yellow. No foul odor had been noted from them. He had observed gradually deepening brown pigmentation of exposed areas of his skin. Blisters had initiated the complaint of sore mouth early in his illness. These had disappeared shortly, leaving him with a diffusely sore tongue. His appetite had been poor throughout his illness, but there had been apparently little, if any, qualitative changes in his diet. For six weeks prior to admission he had taken 2 quarts of milk and 6 eggs daily. Much flatulence and belching had occurred during his illness. Slight swelling of the legs and feet had been noted occasionally. The past history revealed nothing relevant. He had had good health until the onset of his present illness.

Physical Examination.—The patient was emaciated and weighed 107 pounds (48.5 Kg.). The mucous membranes were pale. The skin of the face, neck, hands and feet was deep brown. No pigmentation was observed on any mucous surfaces. The tongue was diffusely red, smooth and glistening (fig. 1). No lymph node enlargement was noted. The chest was barrel shaped and moved poorly. Inconstant squeaks were heard over the lung fields, mostly at the bases. The heart showed nothing of note. The blood pressure was 90/50. Nothing abnormal was noted on examination of the abdomen. The liver and spleen were not felt. There was slight pitting edema of the ankles. The knee and ankle jerks were normally active, and there was no impairment of the vibratory sense.

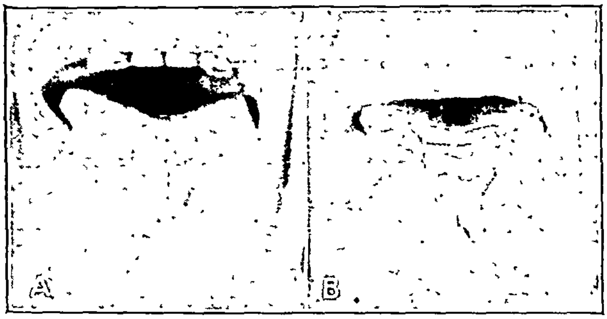

Fig. 1 (case 1).—Appearance of tongue (A) before treatment; (B) three weeks after first treatment. Papillary regeneration of about this extent had been apparent approximately two weeks earlier.

Laboratory Examination.—The urine was negative for albumin and sugar on two occasions, with specific gravities of 1.013 and 1.018 respectively. Nothing of significance was found in the sediment. The urine was not tested for urobilinogen. Values for red and white blood cells, reticulocytes, packed cell volume and hemoglobin are given in figure 2. Differential count of the white blood cells showed 59 per cent segmented neutrophils, 2 per cent juveniles, 35 per cent lymphocytes and 4 per cent monocytes. No increased segmentation of the neutrophils was noted. The red blood cells generally appeared large and showed considerable variation in size and shape. Platelets appeared slightly reduced in number on the smear. Gastric analysis showed 10 degrees of free hydrochloric acid after administration of 50 cc. of 7 per cent ethyl alcohol. The serum icterus index was 6. Total serum proteins were 5.21 Gm. per hundred cubic centimeters, with 3.36 Gm. of albumin. The serum calcium was 8.8 mg. per hundred cubic centimeters. Serum phosphorus was 3.7 mg. per hundred cubic centimeters. An uptake of 5.5 per cent radioactive ferrous iron was found with a dose given one day after treatment was begun. The stools were light yellow to brown and were not foamy or foul smelling. When rubbed between the fingers they had the consistency of cold cream. No parasites or ova were found. The guaiac test was negative for blood. On staining with sudan III three stool specimens were said to show no increased amount of fat. Chemical analysis on two occasions showed fat to comprise 37 per cent and 44 per cent of the dry weight of the stools respectively. The total nitrogen content of two twenty-four hour stool specimens was 3.91 Gm. and 4.89 Gm. respectively. Results of oral glucose tolerance tests, before and after treatment, are given in figure 3. The vitamin A tolerance curve showed a fasting level of 95 international units per hundred cubic centimeters, at five hours 127 international units and at nine hours 117 international units.

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[7] Day, P. L.; Langston, W. C.; Darby, W. J.; Wahlin, J. G., and Mims, Virginia: Nutritional Cytopenia in Monkeys Receiving the Goldberger Diet, J. Exper. Med. **72:** 463 (Oct.) 1940.

[8] Miller, D. K., and Rhoads, C. P.: The Experimental Production of Loss of Hematopoietic Elements of the Gastric Secretion and of the Liver in Swine with Achlorhydria and Anemia, J. Clin. Investigation **14:** 153 (March) 1935.

[9] Day, Langston and Shukers.[3] Day and others.[7] Janota, M., and Dack, G. M.: Bacillary Dysentery Developing in Monkeys on a "Vitamin M" Deficient Diet, J. Infect. Dis. **65:** 219 (Sept.-Oct.) 1939. Avitaminotic Dysentery, editorial, J. A. M. A. **116:** 2169 (May 10) 1941.

[10] Angier, R. B., and others: Synthesis of a Compound Identical with the L. Casei Factor Isolated from Liver, Science **102:** 227 (Aug. 31) 1945.

[11] Darby, W. J., and Jones, E.: The Treatment of Sprue with Synthetic L. Casei Factor (Folic Acid, Vitamin M), Proc. Soc. Exper. Biol. & Med. **60:** 259 (Nov.) 1945. Darby, Jones and Johnson.[24]

[12] A vast literature has accumulated on the hemopoietic activity in chicks and in rats treated with sulfonamide drugs of a number of compounds which have been variously termed B_c, B_c-conjugate, L. casei factors (of which there are at least three), "folic acid," factors U and R, and the like. It is not our purpose in this paper to review the interrelationships of these factors. For recent summaries of the problem the reader is referred to the following reviews: Wieder, S.: The Present Status of Lactobacillus Casei Factor, Pearl River, Lederle Laboratories, Inc., June, 1944. Daft, C. F. S., and Sebrell, W. H.: Sulfonamides and Vitamin Deficiencies, Vitamins and Hormones **3:** 60, 1945. Day, P. L., and Totter, J. R.: The Bioassay of the Factor Variously Called Vitamin M, Factor U, Vitamin B_c, Norite Eluate Factor, Folic Acid, and Lactobacillus Casei Factor, Biological Symposia, to be published. Anonymous: Some Relations of Vitamin B_c Conjugate, Nutrition Rev. **4:** 15 (Jan.) 1946. Anonymous: Some Clinical Investigations with Isolated and Synthetic L. Casei Factors and Related Compounds, ibid. **4:** 11 (Jan.) 1946. Norris, L. C., and Heuser, G. F.: Water Soluble Vitamins, Ann. Rev. Biochem. **14:** 500, 1946.

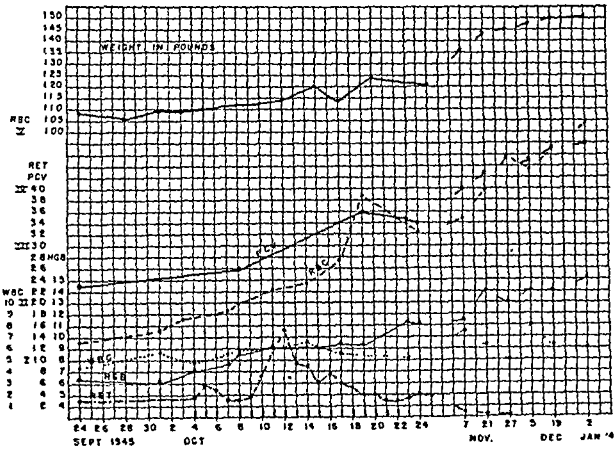

Fig. 2 (case 1).—Hematologic responses. Each upright bar represents the intramuscular injection of 15 mg. of synthetic L. casei factor. Weight changes are shown at top.

Corresponding values for serum carotene ranged from 18 to 21 micrograms per hundred cubic centimeters. B complex excretion tests gave two hour excretion values of thiamine 0.02 mg., riboflavin 0.58 mg. and N-methylnicotinamide 2.54 mg. Intravenous glucose tolerance tests using 20 Gm. of glucose gave the following values: fasting, 90 mg. per hundred cubic centimeters; five minutes, 194 mg. per hundred cubic centimeters; fifteen minutes, 144 mg. per hundred cubic centimeters; thirty minutes, 84 mg. per hundred cubic centimeters; one hour, 58 mg. per hundred cubic centimeters, and one and one-half hours, 75 mg. per hundred cubic centimeters. X-ray examination of the gastrointestinal tract showed the typical atony of the small intestine with pooling of the barium. An electrocardiogram showed low voltage and isoelectric T waves, interpreted as indicating myocardial disease.

Course.—Beginning on October 4 he was given 15 mg. of synthetic L. casei factor daily for eighteen days by intramuscular injection. Four days after treatment was begun his tongue was no longer sore; the next day evidence of papillary regeneration was present. The hematologic response is given in figure 2. The diarrhea had subsided by eight days after the beginning of treatment. At about this time he developed considerable edema of his feet and legs. This gradually disappeared in four or five days. The blood pressure was 110/74 on the eleventh day of treatment. The pigmentation of the skin gradually decreased. His appetite became excessive and the weight gain was rapid (fig. 2). He appeared quite vigorous and by three months after beginning treatment he had gained 43 pounds (19.5 Kg.).

Serum proteins three weeks after the institution of therapy had increased to a total of 6.77 Gm. per hundred cubic centimeters, with 4.35 Gm. of albumin per hundred cubic centimeters. A stool specimen examined two months after treatment was begun showed 29 per cent of dry weight to be fat. At this same time 137 international units of vitamin A was found in the blood serum; no carotene was present. A second gastrointestinal x-ray examination twelve days after treatment was begun showed no change from that observed before therapy was instituted.

Case 2.—*History.*—A white woman aged 22 entered Vanderbilt University Hospital on Oct. 15, 1945 complaining chiefly of diarrhea of three months' duration. Five to six stools were passed daily. These were bulky and foul smelling. The color of the stools had varied greatly during her illness. Cramping abdominal pain had occurred usually with each bowel movement. Six weeks after the onset of diarrhea she delivered a full term infant. After delivery she vomited one to two times daily for two weeks and began to lose weight rapidly. The diarrhea persisted until admission to the hospital. She lost from 20 to 25 pounds (9 to 11 Kg.) below her usual nonpregnant weight during this three month period. Weakness had been progressive during this time. She was brought to the hospital by ambulance, being unable to stand. Since her marriage eighteen months before her diet had consisted of jam, hominy and sweet potatoes for breakfast, beans, cabbage and hominy for lunch and beans, cabbage, hominy and occasionally vegetable soup for dinner. Her appetite had become increasingly poor, so that during her pregnancy only small amounts of these foods were eaten. For five weeks prior to admission she had been given by her local physician biweekly injections of considerable amounts of thiamine, niacin, pantothenic acid, riboflavin and pyridoxine without benefit.

Six weeks before admission it was noted that the skin of her arms was darker than normal. She had not been exposed to sunlight. Her tongue became sore three weeks before admission. Her legs had tingled throughout her illness.

Physical Examination.—The patient was small and emaciated and appeared chronically ill. She weighed 64 pounds (29 Kg.). Her skin exhibited dark brown diffuse pigmentation over the hands, wrists and feet. The scleras were faintly icteric. The buccal mucosa was pale. The gums were soft and bled readily. The tongue was pale, with much atrophy of the papillae and areas of redness along the margin. The thyroid was not enlarged. The lungs were clear on physical examination. The heart was not enlarged. A blowing systolic murmur of moderate intensity was heard over the entire precordium. The blood pressure was 95/58. The abdomen was scaphoid. There was no tenderness. The liver and spleen were not palpable. The extremities were quite thin. There was no edema. The knee and ankle jerks were active, and vibratory sense was not impaired.

Laboratory Examination.—At the time of admission the urine showed a trace of albumin and of sugar as the only findings of note. It later became entirely normal. It was not tested for urobilinogen.

The majority of the hematologic findings are shown in figure 4. Differential count of the white blood cells showed 54 per cent segmented neutrophils, 3 per cent stabs, 0.5 per cent eosinophils, 40 per cent lymphocytes, 2 per cent monocytes and 0.5 per cent neutrophilic myelocytes. The red blood cells appeared well stained and generally large, with moderate variation in size and shape. The platelets appeared to be slightly reduced in number on the stained smear. The platelet count was 200,000 per cubic millimeter by an indirect method. Bone marrow obtained by sternal aspiration before treatment showed generalized hyperplasia with many megaloblasts. The serum icterus index was 12. Total serum proteins were 5.59 Gm. per hundred cubic centimeters, with 4.02 Gm. of albumin. The serum calcium was 10.9 mg. per hundred cubic centimeters, the serum phosphorus 4 8 mg. per hundred cubic centimeters. Gastric analysis revealed free hydrochloric acid after injection of histamine. Three and five-tenths per cent of a dose of radioactive ferrous iron was taken up. This dose was given on the day of the first injection of "folic acid."

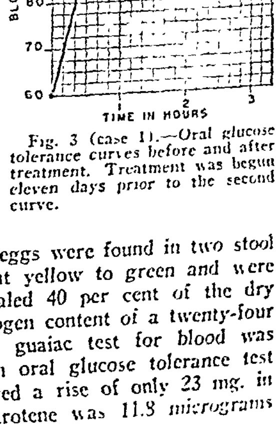

Fig. 3 (case 1).—Oral glucose tolerance curves before and after treatment. Treatment was begun eleven days prior to the second curve.

A small number of hookworm eggs were found in two stool specimens. The stools were light yellow to green and were greasy to touch. Analysis revealed 40 per cent of the dry weight to be fat. The total nitrogen content of a twenty-four hour stool was 2.90 Gm. The guaiac test for blood was negative on three occasions. An oral glucose tolerance test performed before treatment showed a rise of only 23 mg. in a three hour period. Serum carotene was 11.8 micrograms, per hundred cubic centimeters, serum vitamin A 90 international units, serum vitamin C 0.0 mg. per hundred cubic centimeters. The vitamin A tolerance curve following administration of 200,000 international units of vitamin A was 60 international units fasting, 118 international units at three hours, 686 international units at five hours and 671 international units at nine hours. Serum carotene ranged from 17 to 22 micrograms per hundred cubic centimeters. The vitamin B complex excretion test showed values as follows: thiamine 0.03 mg., riboflavin 0.06 mg. and N-methylnicotinamide 4.84 mg.

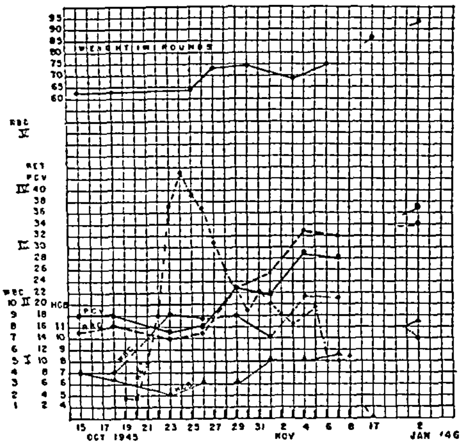

Fig. 4 (case 2).—Hematologic responses. Each upright bar represents the intramuscular injection of 15 mg. of synthetic L. casei factor. Weight changes are shown at top.

Course.—Beginning on October 19 the patient was given 15 mg. of synthetic L. casei factor daily by intramuscular injection for nineteen days. Four days after treatment was begun the soreness of her tongue had disappeared. Papillary regeneration followed rapidly. The hematologic response is shown in figure 4. By the twelfth day of treatment the diarrhea had ceased. There was rapid gain of strength, appetite and weight. After five days of therapy mild generalized edema developed; this lasted a few days and then disappeared. Twenty-nine days after the onset of treatment she weighed 86½ pounds (39 Kg.), a gain of 22½ pounds (10 Kg.) over her admission weight. After five days of treatment the bone marrow showed a predominance of normoblasts; this finding persisted six days later. There was a progressive increase in platelets with treatment until after seven days they had reached a level of approximately 2,000,000 per cubic millimeter (indirect method). They remained at about this level during the next twelve days of observation.

When seen seventy-five days after the first injection of "folic acid" she appeared vigorous and had no complaints. Her weight at this time was 94 pounds (43 Kg.), a gain of 30 pounds (14 Kg.) since the time of admission to the hospital. However, she was found to have a moderate macrocytic anemia at this time. All pigmentation of the skin had disappeared.

Case 3.—*History.*—A white man aged 67 entered Vanderbilt University Hospital on Nov. 8, 1945 complaining of weakness and diarrhea over a period of several years. He had been admitted to the hospital in 1939, at which time a diagnosis of sprue had been made. All of the findings typical of this disease were present then. He was treated with large doses of liver extract, with a resulting reticulocyte peak of less than 6 per cent when his initial erythrocyte count was 2.62 million per cubic millimeter. There was a gradual increase in red blood cells and hemoglobin, but these never reached a satisfactory level. It was observed that he developed considerable edema of his feet and legs after treatment with liver extract was begun. Six and one-half weeks after this first admission he was readmitted because of increasing anemia, although he had been receiving 100 units of liver extract weekly. On the second admission he responded slowly to treatment with liver extract and transfusions. Between 1939 and the present admission he had received liver extract irregularly, noting, however, that he felt much better when getting it. He had had occasional bouts of diarrhea lasting as long as several weeks. Weight loss had accompanied each bout of diarrhea. His tongue had been sore at intervals. Swelling of his legs occurred intermittently. He had drunk considerable whisky over a period of years but none recently because it burned his mouth and throat. For some time before the present admission he had noted increasing pigmentation of his hands and wrists.

His appetite had remained good. His diet was low in meat and vegetables, however. It consisted mostly of milk (1 quart daily), 2 eggs daily, cereals, syrup, jelly, bread and butter.

Physical Examination.—The patient appeared chronically ill. The skin was somewhat loose, and there was dark brown pigmentation of the hands, forearms, face, neck and ankles. There was slight pallor of the skin and mucous membranes. The scleras did not appear icteric. The tongue was red about the tip, and there was some papillary atrophy along the lateral margins near the tip. Several bright red spots were seen on the soft palate. Small epitrochlear, cervical, axillary and inguinal nodes were palpable. The chest moved poorly and was generally hyperresonant. The breath sounds were heard poorly. The heart was small and quiet. The blood pressure was 110/70. The abdomen was slightly full about the umbilicus. There was no tenderness. The liver and spleen were not felt. There was a hydrocele of the left tunica vaginalis and atrophy of the right testicle. There was no edema of the ankles. The knee and ankle jerks were sluggish. Vibratory sense was diminished over both legs.

Laboratory Examination.—A casual specimen of the urine, which had a specific gravity of 1.028, showed no abnormal constituents. The majority of the hematologic findings are given in figure 5. Differential count of the white blood cells showed 50 per cent segmented neutrophils, 1.5 per cent eosinophils, 3 per cent basophils, 44 per cent lymphocytes and 1.5 per cent monocytes. A slightly increased segmentation of the segmented neutrophils was noted. The red blood cells appeared to be well stained, were predominantly macrocytic and showed moderate variation in size and shape. The bone marrow showed hyperplasia, with many megaloblasts and erythroblasts. Platelets as counted by an indirect method ranged around 200,000 per cubic millimeter. The serum icterus index was 3. Serum calcium was 9.7 mg. per hundred cubic centimeters, and serum phosphorus 3.5 mg. Total serum proteins were 5.98 Gm. per hundred cubic centimeters, with 3.79 Gm. of albumin. Gastric analysis revealed free hydrochloric acid without alcohol or histamine stimulation.

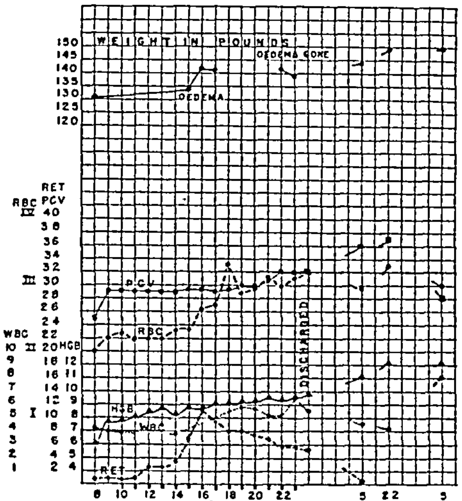

Fig. 5 (case 3).—Hematologic responses. Each upright bar represents the intramuscular injection of 15 mg. of synthetic L. casei factor. Starting on November 25, 5 mg. of this material was given daily by mouth.

Two per cent of a dose of radioactive ferrous iron was taken up, this being given on the day of admission. The stools were chalky white in appearance. No ova or parasites were found. The guaiac test for blood was negative. Analysis of the stool showed a fat content of 23 per cent dry weight. Total nitrogen of a twenty-four hour stool was 4.11 Gm. Values for oral glucose tolerance curves are given in figure 6. The vitamin A tolerance curve after administration of 200,000 international units of vitamin A showed 119 international units fasting, 127 international units in three hours and 169 international units in five hours. The serum carotene ranged from 18 to 21 micrograms per hundred cubic centimeters. Values shown by vitamin B complex excretion tests were thiamine 0.04 mg., riboflavin 0.32 mg. and N-methylnicotinamide 4.49 mg.

X-ray examination of the gastrointestinal tract showed puddling of barium in the small intestine characteristic of that seen in sprue and other deficiency syndromes.

Course.—Beginning on November 10 the patient was given eighteen injections of 15 mg. of synthetic L. casei factor intramuscularly in a period of fifteen days. He was then given 5 mg. of this material by mouth daily, which he has continued. Soreness of his tongue disappeared after four days of treatment. Papillary regeneration was apparent a few days later. Much edema of his feet and legs was noted on the seventh day of therapy. This subsided in a few days. Ten days after treatment was begun the bone marrow showed normoblasts as the predominant young red blood cells. On the eleventh day of treatment a second vitamin A tolerance curve gave values of 101 international units fasting, 114 international units at three hours, 129 international units at five hours and 133 international units at nine hours. The carotene level ranged from 21 to 25 micrograms per hundred cubic centimeters.

A second x-ray examination of his gastrointestinal tract with a barium meal was made thirteen days after treatment was begun. This showed no change from the earlier findings.

There was a rapid gain in weight, amounting to 8 pounds (3.6 Kg.) during his hospital stay of fourteen days after treatment was begun. When seen forty-two days after his first treatment he had no complaints and appeared vigorous. At this time he had gained 17 pounds (7.7 Kg.) above his hospital admission weight. Serum vitamin A on this date was 89 international units, serum carotene 13 micrograms per hundred cubic centimeters. He said that all oral and substernal soreness had gone and that he could now drink whisky without any sensation of burning.

COMMENT

The pattern of response exhibited by these 3 patients with sprue has been similar, and it resembles in all respects that which follows the administration of an active liver preparation to such persons. Within two or three days after therapy was instituted all 3 patients experienced an improved sense of well being, which was manifested by increased alertness and cheerfulness. The glossitis was relieved on the fourth or fifth day; regeneration of the lingual papillae was obvious on the fifth day. Simultaneously there was cessation of the diarrhea and increased appetite. Weight gains commenced on approximately the fifth to the seventh day of therapy. The initial increases in weight appeared to reflect water retention. They occurred rapidly and were accompanied by demonstrable edema and hemodilution, which disappeared at about the twelfth to the fourteenth day. At the latter time a slight weight loss occurred. Transitory edema appearing in treated cases of nutritional macrocytic anemia at the height of hemopoiesis has been noted by Holmes.[13] The subsidence of this edema has been followed by striking increases in body weight unaccompanied by evidences of water retention. These gains were accompanied by general betterment and an almost insatiable appetite.

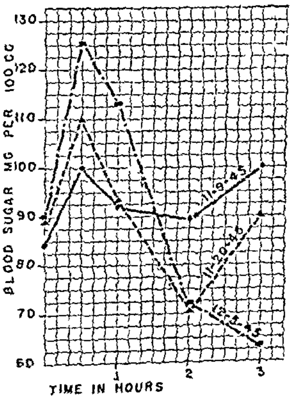

Fig. 6 (case 3).—Oral glucose tolerance curves. First curve made before treatment, second curve ten days after beginning of treatment and third curve twenty-five days after beginning of treatment

In relation to the gain in weight it is of interest to consider the alterations which were found in the glucose tolerance as indicative of improved absorption. All 3 patients exhibited abnormally flat oral glucose tolerance curves prior to treatment. Intravenous glucose absorption curves run on 2 of the patients were normal. The oral glucose tolerance was repeated on 2 of the patients following therapy. In both instances there was a return to an essentially normal curve after two weeks to a month following the institution of treatment with L. casei factor (figs. 3 and 6). If this abnormality indicates a faulty absorption of glucose in sprue, as is usually held, it would appear that synthetic L. casei factor is capable of correcting this defect in absorption from the gastrointestinal tract. Furthermore, its activity in this respect again resembles that of liver extract as illustrated by case 3 (compare figs. 6 and 7).

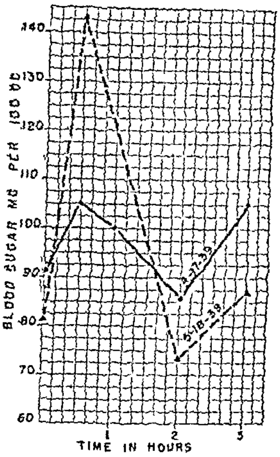

Fig. 7 (case 3).—Oral glucose tolerance curves made before and after treatment with liver extract during first hospital admission in 1939. Second curve twenty-seven days after beginning of treatment.

It is generally assumed that the steatorrhea in sprue is another evidence of impaired absorption,[14] although incontrovertible proof of this assumption has not been provided. It is well recognized that the steatorrhea may persist even after intensive liver therapy which results in a satisfactory clinical response. Neither of the 2 cases which we have followed with repeated stool analyses has shown a return to the normal fat content, although the diarrhea was promptly relieved. Furthermore, these patients have not exhibited an increase in plasma carotene content—another finding consistent with the continued presence of excess fat within the gastrointestinal lumen. Whether the finding of low serum carotene levels in sprue[15] is corrected following liver therapy is not known. It appears logical to expect it to be altered only in those patients in whom the steatorrhea is arrested following therapy, for it has been demonstrated that the continued presence of a nonabsorbed fatlike substance within the intestinal lumen interferes greatly with the absorption of carotene[16] and that carotene absorption is dependent on simultaneous fat absorption.[17] It is of interest that the fat extracted from the stools of our 3 patients was highly colored, with a yellowish red pigment suggesting carotenoid pigments. There has been a rise in serum vitamin A levels in 2 of these patients following therapy.

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[13] Holmes, E. G.: Observations on Edema Occurring During the Course of Macrocytic Anemia, Brit. M. J. 2:561 (Oct. 27) 1945.

[14] Thaysen, T. E. H.: Ten Cases of Idiopathic Steatorrhea, Quart. J. Med. 4:359 (Oct.) 1935.

[15] Cayer, D.; Ruffin, J., and Perlzweig, W. A.: Vitamin Levels in Sprue, Am. J. M. Sc. 210:200 (Aug.) 1945.

[16] Rowntree, J. I.: The Effect of the Use of Mineral Oil on the Absorption of Vitamin A, J. Nutrition 3:345 (Jan.) 1931. Dutcher, R. A.; Harris, P. L.; Hartzler, E. R., and Guerrant, N. B.: Vitamin Studies: XIX. The Assimilation of Carotene and Vitamin A in the Presence of Mineral Oil, ibid. 8:269 (Sept.) 1934.

[17] Wilson, H. E. C.; Das Gupta, S. M., and Ahmad, B.: Studies on the Absorption of Carotene and Vitamin A in the Human Subject, Indian J. M. Res. 24:807 (Jan.) 1937.

and a less abnormal vitamin A tolerance curve has been found. Only 1 (patient 2) has shown an increased serum carotene level. Repeated analyses of the stools of this patient have not been obtained.

The rapid relief of the symptoms of glossitis and the regeneration of the lingual papillae are worthy of comment, since it has been implied that the glossitis in sprue and in pernicious anemia may be due to niacin deficiency.[18] Our experience would indicate that this L. casei factor or some metabolite of it is responsible for the relief of this glossitis.

In our 3 patients treatment has brought about increases in all of the formed elements of the blood, i. e. red cells, white cells and platelets. The changes pertaining to red and white cells are shown in the respective charts. While the blood platelets were not at appreciably low levels before treatment, their approximate tenfold increase following treatment was striking and occurred in all 3 patients. These responses resemble those seen in vitamin M deficient monkeys successfully treated with liver extract, yeast or L. casei factor.[19]

Patient 2 showed a lag in hemoglobin as her red blood cells increased. This course is not infrequently seen in pernicious anemia at a comparable stage in treatment. It is of interest that she was six weeks post partum and presumably her iron stores were low. It was our plan to give her iron with the expectation of obtaining a second response in reticulocytes, but she would not remain in the hospital sufficiently long to permit this. The finding of a moderate macrocytic anemia fifty-six days after completion of treatment leads us to predict that she has reached her peak of response and that a relapse is to be expected.

We are indebted to Dr. Paul F. Hahn of the Department of Biochemistry of Vanderbilt University Medical School for the measurements of radioactive iron absorption by these patients. The percentage of the ferrous iron absorbed in all 3 cases was much below that level found in iron deficiency anemia. This is of particular interest in case 2, in which during therapy a hypochromic anemia developed. The discussion of the interpretation of this failure to absorb iron in untreated sprue is outside the scope of the present communication.

Bone marrow obtained by sternal aspiration was examined before and after treatment in cases 2 and 3. Prior to treatment a typical megaloblastic arrest was seen. In case 2 this largely megaloblastic picture was replaced five days after institution of treatment by normoblastic predominance, which persisted on the eleventh day of therapy. It is to be recalled that at this time the macrocytic anemia was becoming hypochromic and microcytic. In case 3 the bone marrow had returned to normal ten days after treatment was begun.

The accompanying table compares the reticulocyte peaks observed in these 3 patients with sprue with those predicted in patients with pernicious anemia at the same level of red blood cells.[20] It is seen that 2 of the 3 patients obtained slightly lower reticulocyte responses than predicted for patients with pernicious anemia of the same grade of anemia, while the response of 1 patient greatly exceeded that predicted. Satisfactory increases in red blood cells occurred in all patients.

Although it is well to reserve a discussion of the probable relationship of this material to the antisprue factor present in liver extracts until the chemical nature of these factors are revealed, certain observations are pertinent. This material occurs in liver and in many liver extracts. It is effective when injected in the treatment of both sprue and pernicious anemia;[21] hence it has an activity corresponding to Castle's maturation factor. It seems logical to assign to this factor at least part of the antisprue activity of liver extracts. This may not be the only effective antisprue factor; however, it appears to be a satisfactory one for therapeutic use.

The present evidence suggests that the administration of this L. casei factor will result in a satisfactory response in cases of sprue, pernicious anemia, pernicious anemia of pregnancy and nutritional macrocytic anemia —all conditions which are associated with a marrow characterized by a megaloblastic arrest. Spies and his associates[22] have reported on the use of this material in a series of inadequately diagnosed macrocytic anemias and have implied thereby that it is efficacious in the treatment of all macrocytic anemia. Unpublished data of ours indicate that the factor is effective only in those macrocytic anemias with hyperplastic primitive marrow. So-called "dysplastic" and "aplastic" anemias have failed to respond to this material even though examination of the peripheral blood indicated a macrocytic anemia in some of these. Our experience with the refractory group of anemias has confirmed that of Watson and his associates.[23] One may predict, therefore, that this synthetic L. casei factor will be of value in treating those macrocytic anemias which are accompanied by hyperplastic marrow and which are known to respond satisfactorily to liver preparations.

Reticulocyte Peaks

	Maximum Reticulocyte Response Calculated for Pernicious Anemia	Maximum Reticulocyte Response Observed in Cases of Sprue
Case 1	23	15
Case 2	26	43
Case 3	15	11

The relationships which have been outlined have led us to suggest that vitamin M deficiency in the monkey is the experimental analogue of sprue in man.[24] Since there appear to be a number of related factors which have hemopoietic activity in animals and confusion has arisen in the nomenclature of these substances, it is tentatively suggested that those factors of this group

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18. Manson-Bahr, P.: The Treatment of Sprue with Vitamin B$_2$ and Its Bearing on the Etiology of This Disease, Tr. Roy. Soc. Trop. Med. & Hyg. **34:** 347 (March) 1941. Sevringhaus, E. L., and Kyhos, E. D.: Reversal of Lingual Atrophic Changes with Nicotinamide Therapy, Arch. Int. Med. **76:** 31 (July) 1945.

19. Langston, Darby, Shukers and Day.[5] Day and others.[7] Day, Mims and Tottter.[6]

20. Isaacs, R., and Friedman, A.: Standards for Maximum Reticulocyte Percentage after Intramuscular Liver Therapy in Pernicious Anemia, Am. J. M. Sc. **196:** 718 (Nov.) 1938.

21. Moore, C. V.; Bierbaum, O. S.; Welch, A. D., and Wright, L. D.: The Activity of Synthetic Lactobacillus Casei Factor ("Folic Acid") as an Anti-Pernicious Anemia Substance, J. Lab. & Clin. Med. **30:** 1056 (Dec.) 1945.

22. Spies, T. D.; Vilter, C. F.; Koch, M. B., and Caldwell, M. H.: Observations of the Antianemic Properties of Synthetic Folic Acid, South. M. J. **38:** 707 (Nov.) 1945.

23. Watson, C. J.; Sebrell, W. H.; McKelvey, J. L., and Daft, F. S.: Possible Effectiveness of the L. Casei Factor ("Folic Acid") Concentrates on Refractory Anemia and Leukopenia with Particular Reference to Leukopenia Following Radiation Therapy, Am. J. M. Sc. **210:** 463 (Oct.) 1945.

24. Darby, W. J.; Jones, E., and Johnson, H. C.: The Use of Synthetic L. Casei Factor in the Treatment of Sprue, Science, **103:** 108 (Jan. 25) 1946. Jones, E., and Darby, W. J.: The Response of Sprue to Synthetic L. Casei Factor (Vitamin M), Proc. South. Section American Federation for Clinical Research, Atlanta Meeting, Dec. 8, 1945.

which possess similar hemopoietic activity for primates may conveniently be referred to as the vitamin M group. Such a usage would be consistent with the previous practice in naming the vitamins. Furthermore, it would be justified by the chronological order of the discovery of the biologic effect of this group of substances. The term "folic acid" has been so loosely employed that its further use in reference to this group of compounds can but lead to confusion.[25]

The aforedescribed responses demonstrate that all of the cardinal manifestations of sprue which are amenable to liver therapy undergo remission following the intramuscular injection of this synthetic L. casei factor. Study for longer periods of time will determine whether the fat content of the stools and the x-ray pattern of the gastrointestinal tract return to normal following such therapy. It is to be emphasized that these remissions have persisted for at least two months since the cessation of therapy. The response of 1 patient previously treated with liver extract has been more complete on the doses of L. casei factor used than was his previous response to liver extract. It is worthy of comment that patient 2 had previously received from her local physician a series of injections of thiamine, niacin, riboflavin, pyridoxine and pantothenic acid for a five weeks period with no beneficial effects.

The doses administered to these 3 patients are probably in excess of the minimal amount which would produce a maximal response. Moore and his co-workers[21] report a reticulocyte response in 2 cases of true addisonian pernicious anemia following the intravenous injection of 2 mg. per day of this factor. Jukes[26] states that the requirement of the chick for this L. casei factor is one-fifth to one-tenth that of its requirement for riboflavin. If a similar ratio holds in man, a maintenance dose would be of the order of 0.1 to 0.2 mg. per day, while curative doses may well be of the magnitude of a milligram daily. It should be pointed out that we have observed no local or systemic toxic effects from the administration of this material in the doses employed to some 12 persons who manifested a variety of blood dyscrasias.

Confirmation of our finding of the activity of this synthetic factor in cases of sprue has been reported from two other laboratories.[27]

SUMMARY

Intramuscular administration of synthetic L. casei factor in doses of 15 mg. per day has been followed by complete hematologic responses in sprue. The glossitis, diarrhea and absorption of water soluble factors have also responded to this substance as the sole therapeutic agent. The evidences of impaired fat absorption have not been altered in 2 cases by this therapy during a two month observation period. The serum carotene level in 1 case has risen. This substance or a precursor or metabolite of it would appear to be one of the active antisprue factors in liver extracts.

The resemblance of sprue to vitamin M deficiency in the monkey has led us to believe that the latter is the experimental analogue of sprue in man.

We propose that the group of substances related to L. casei factor and "folic acid" and which exhibit hemopoietic activity for primates be termed the "vitamin M group."

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[25] Hogan, A. G.: Letter to the Editor, Nutrition Rev. 2:223 (July) 1944.

[26] Jukes, T. H.: Personal communication to the authors.

[27] Moore, Bierbaum, Welch and Wright.[21] Spies, T. D.; Lopez, G. G.; Menendez, J. A.; Minnich, Virginia, and Koch, Mary B.: The Effect of Folic Acid on Sprue, South. M. J. 39:30 (Jan.) 1946.

Clinical Notes, Suggestions and New Instruments

THE EFFECT OF ATABRINE SUPPRESSIVE THERAPY ON EYESIGHT IN PILOTS

COLONEL E. A. ABBEY and MAJOR E. A. LAWRENCE
Medical Corps, Army of the United States

In order to determine the effect of continued doses of atabrine on visual acuity, 1,127 pilots from the Air Transport Command were tested. None of these pilots had ever worn glasses; they were tested during their active tour of duty, which involved flying from India or Assam bases to China across the Himalayan mountains—the so-called Hump. The problem of vision is of singular interest in this type of flying, which is probably the most hazardous of any in the world; treacherous mountains and an ever changing atmosphere which requires a great amount of instrument flying keep the pilot constantly alert and obviously require an absolutely faultless vision.

Effect of Suppressive Atabrine on Eyesight and Skin in 1,127 Cases

	Number of Cases	Percentage
Age		
20 to 25	588	52.1
26 to 30	393	34.9
31 to 35	128	11.4
36 to 40	18	1.6
Acuity		
No change	971	86.1
Better	114	10.1
Worse	42	3.8
Pigmentation of skin		
None	180	16.0
Mild	501	44.5
Moderate	428	37.9
Severe	18	1.6
Duration of atabrine ingestion		
1 month	81	7.2
2 months	55	4.9
3 months	67	6.0
4 months	523	46.4
5 months	259	23.0
6 months	110	9.6
7 months	17	1.5
8 months	9	0.8
9 months	3	0.3
10 months	3	0.3

Every pilot is required to pass the physical examination for flying status, the so-called 64 examination, at least once a year and oftener if prolonged hospitalization has occurred or following accident. Visual acuity was recorded from such an examination prior to the ingestion of suppressive atabrine. Visual acuity was then performed after varying months of atabrine ingestion. The results are given in the accompanying table.

If there was no alteration in the visual acuity prior to and during atabrine ingestion the result was recorded as "no change." If improvement or deterioration of acuity occurred it was recorded as "better" or "worse." In no instance was there a change for better or worse greater than 5/20. Of note too is the fact that in the entire group the acuity prior to suppressive atabrine was either 20/20 or 20/15 vision. It at once becomes obvious that a change in acuity of such small degree is without practical significance, for it is well known that small temporary variations may occur normally as a result of mental and physical fatigue, loss of sleep, nervousness and the general state of health and well being of the examined subject. Only one sitting was required to determine the acuity

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From the India-China Air Transport Command.

in order to conform as closely as possible with previous examinations, and no rest previous to the test was given. Such conditions would further tend to minimize, to a point of negligence, changes of minor degree in acuity, since many of the pilots were tested after long flight and others after a night of varying indulgences. We are therefore correct in assuming that in no instance, save for the 1 case presented here, was there a change in acuity of any practical significance.

In this group of pilots ages ranged from 20 to 40 years, with 85 per cent approximately lying between 20 and 30 and the remaining 15 per cent over 30. Obviously, age has been of no significance in the changing of acuity in spite of the natural tendency for the eyesight to become hyperopic as the years advance.

Suppressive atabrine is administered in this theater in an initial dose of 0.1 Gm. a day for five days followed by 0.2 Gm. (two tablets) a day for ten days and then 0.1 Gm., or one tablet, every day. Approximately 70 per cent of the pilots tested had been taking the drug between sixteen and twenty weeks, certainly a long enough time to alter acuity materially if this was to prove an untoward effect. It was suggested, but certainly not proved, that acuity may change, the deeper the dermal staining from the ingestion of atabrine. From the table it may be seen that 82 per cent showed a definite yellow hue to the skin, varying from an arbitrary "mild" to "moderate." It was noted that there was no correlation between length of time of ingestion and intensity of dermal staining; some men, for example, having taken the drug for eight months, showed only a mild yellow discoloration and others, having taken the drug for one month, showed a moderate or severe staining. It would appear that the degree of dermal staining is purely the result of an individual susceptibility to the ingested drug. Certainly too there is no correlation between the degree of staining and visual acuity; as a matter of fact, all 18 cases that showed a severe reaction, in that the skin was deeply yellow stained, presented no change in acuity at all.

One case of apparently pure ocular sensitivity to atabrine has been brought to our attention and was instrumental in initiating this study. It occurred in a medical officer (A. E. S.) aged 35 who had been taking atabrine for twenty-one days prior to the onset of symptoms. These consisted of blurring of vision and a halo around lights during the dark hours. The visual acuity in both eyes was 20/30 prior to ingestion and 20/50 in both eyes three weeks after taking the drug. Ophthalmoscopically only a hazy cornea was noted; by slit lamp there were tiny patches of corneal edema. With discontinuance of atabrine suppressive therapy the acuity returned to 20/30 in both eyes in sixteen days, and all objective findings returned to normal. Following a rest period atabrine was again administered, with recurrence of all symptoms and objective findings as listed in some twenty-one days; return to normal vision occurred at this time in twenty-five days. There seems to be little doubt that in this case there was a definite sensitivity to the drug, manifested by patches of corneal edema and decrease in visual acuity.

CONCLUSIONS

1. The continued use of atabrine in doses of one tablet (0.1 Gm.) a day appears to have no effect on visual acuity, except in a highly sensitive and rare individual.

2. Older persons on suppressive atabrine therapy do not differ from the younger group as far as visual acuity is concerned.

3. There is no correlation between the depth of dermal discoloration and change in visual acuity.

4. The depth of dermal staining appears to be as a result of individual sensitivity and not related to the length of time atabrine has been taken.

Social and Natural Science.—Scientific discoveries do not fall from a clear sky. What actually happens is that the mind finds solutions to challenging problems only after long contact. How solutions finally dawn, not unexpectedly, is occasionally narrated after most careful autobiographical exploration as the long list of simultaneous discoveries demonstrates.—Cohn, Alfred E.: Minerva's Progress, New York, Harcourt, Brace & Co., 1946.

Council on Pharmacy and Chemistry

REPORT OF THE COUNCIL

The following statement has been authorized for publication by the Council.
Austin Smith, M.D., *Secretary.*

CHLOROQUINE, NONPROPRIETARY NAME FOR SN 7618

The Board for Coordination of Malarial Studies has requested the Council on Pharmacy and Chemistry to give consideration to the recommendation of a nonproprietary name for a new antimalarial compound known so far as SN 7618. It has the chemical structure of 7 chloro-4 (4-diethylamino-1-methylbutylamino) quinoline. Chloroquine has been proposed as the nonproprietary name.

The Council has been informed that the compound is covered by a German patent which has been assigned to the Winthrop Chemical Company, although all of the work in developing its antimalarial properties and usage has been done by the government contractors working under the Office of Scientific Research and Development. The Council has been cognizant of the value of the cooperative studies which have been undertaken during the war. It feels that every effort should be made to encourage this and similar work and to make available as soon as seems expedient the results of the studies so that they may be applied for the good of humanity. The adoption and use of appropriate nonproprietary names for truly useful drugs would seem to be a step in this direction.

The Council has voted to recognize Chloroquine as a nonproprietary name for the antimalarial substance sometimes described as SN 7618.

Council on Foods and Nutrition

ACCEPTED FOODS

The following additional foods have been accepted as conforming to the Rules of the Council on Foods and Nutrition of the American Medical Association for admission to Accepted Foods.
James R. Wilson, M.D., *Secretary.*

PREPARATIONS USED IN THE FEEDING OF INFANTS*(*See* Accepted Foods, 1939, p. 156)

Beech-Nut Packing Company, Canajoharie, N. Y.

Beech-Nut Junior Raisin Rice Pudding contains milk (raw-whole), dextrose, white rice, raisins, whole eggs, farina (enriched), salt and water.

Analysis (submitted by manufacturer).—Total solids 30.08%, moisture 69.92%, ash 0.87%, fat (ether extract) 1.45%, protein (N × 6.25) 2.42%, crude fiber 0.07%, carbohydrates (other than crude fiber) 25.27%, calcium 0.063%, phosphorus 0.068%, iron total 0.41 mg. per hundred grams, iron "available" (bipyridyl method) 0.40 mg. per hundred grams, copper 0.07 mg. per hundred grams.

Calories.—124 per hundred grams, 35 per ounce.

Vitamins.—	Per Hundred Grams
Vitamin A, total	114 U. S. P. units
Thiamine	0.023 mg.
Ascorbic acid	2.02 mg.
Riboflavin	0.106 mg.
Niacin	0.80 mg.

The Gerber Products Company, Fremont, Mich.

Gerber's Chopped Carrots.

Analysis (submitted by manufacturer).—Total solids 7.3%, protein 0.6%, fat (ether extract) 0.1%, crude fiber 0.6%, carbohydrates (by difference) 4.9%, ash 1.0%, calcium 0.025%, phosphorus 0.021%, iron 0.0009%.

Calories.—6 per ounce.

Vitamins.—Vitamin A equivalent	12,500 I. U.	per hundred grams
Thiamine	0.025 mg.	per hundred grams
Riboflavin	0.037 mg.	per hundred grams
Ascorbic acid	2.8 mg.	per hundred grams

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SATURDAY, MARCH 23, 1946

RESEARCH IN AVIATION MEDICINE FOR THE GERMAN AIR FORCE

A report[1] recently released by the United States War and Navy departments on German research in aviation medicine concerns, among other subjects, pilot ejection, emergency procedures for escape from pressurized cabins at high altitudes, the effect of high wind velocities on the human head, thorax and abdomen, the liaison approach between aircrew and machine being operated to improve efficiency of operation and research and the development of the personnel parachute. The Germans have developed a parachute emergency oxygen apparatus which consists of a series of high pressure cylinders arranged in a circular manner to form a flat plate about an inch thick. The cylinders are connected to an outlet valve through a narrow tube, which is about 1 meter long and which acts as a metering orifice. The entire assembly is flat and fits into a pocket in both seat and backtype parachutes. During normal flight this emergency system is connected to the main aircraft oxygen system. A ripcord attaches the parachute assembly to the aircraft seat and, when the pilot wishes to leave the airplane, that portion of the emergency system which is attached to the main oxygen system is detached and the emergency oxygen flow valve is opened.

In their experiments on acceleration they measured the systolic and diastolic pressures every fifteen seconds and found that acceleration of 3 g (acceleration of gravity) can be sustained for long periods without difficulty. Above 3 g visual and mental disturbances began. The pulse rate increases rapidly in all trials. G tolerance increases during digestive processes and with addition of carbon dioxide to inhaled mixtures. Use of abdominal bands did not increase g tolerance. To sustain g higher than 3 it is necessary to place the men in horizontal positions.

It is pointed out that visual acuity is only one function of the eye. Other eye functions associated with functions of the brain consist of (*a*) the finding of objects, (*b*) the recognition of objects and (*c*) orientation. In contrast to the visual acuity, these functions can be well trained. Therefore investigations of the higher associated functions are of the greatest practical value to aviation, as shown by the "Rhenshaw System" in the AAF. A test manometer was developed by slight modification of a standard sphygmomanometer for the purpose of measuring the permeability of the capillaries. It was found that pressure of 100 to 200 mm. of mercury was necessary to suck blood out through the skin in normal subjects and considerably less in pathologic subjects. Altitude adaptation could be developed by a stay of at least eleven days in the mountains at an altitude of at least 7,000 feet combined with a great deal of sport, good food and sleep. The limit of the adaptated man's altitude tolerance will be between 26,000 and 31,000 feet on the average without oxygen, although some men get to 33,000 feet. With oxygen the limit is 3,300 feet higher than normal, and man can fly without pressure cabins up to 45,000 feet. The time reserve of an adaptated man at 39,000 feet is one to one and a half minutes. Investigations on the effectiveness of drugs and physical stimulants to improve man's ability to work revealed that caffeine results in great irritability of the nervous system combined with loss of confidence; a mixture of caffeine and metrazol gives much better results; diphenylhydantoin has a depressing effect; morphine induces a desire to rest and to sleep; amphetamine is a good stimulant but results in a hangover. Appreciable improvement in ability and willingness to work was apparent after several Finnish baths (the Sauna) and exposure to sunlight.

An interesting development in eye prostheses is one with a photocell, an amplifier and a sound producer. In this arrangement light is converted into sound. By help of a lens system it is possible to adjust different angles of view. This construction enables blind men to find their way and to obtain sufficient orientation. There is also the development of a visual prosthesis changing the light into a tone in the same manner but combined with an ikonoscope. Thereby one has an ear image instead of an eye image. After a brief training period blind men could read any letter of the alphabet in two seconds. Investigations of other methods showed that this method seems to be the best one to read normal letters and to recognize landscapes.

Contrary to the general idea that rapid rewarming of men after a prolonged immersion in water accelerates collapse, they found that animals recovered much more readily after rapid rewarming than after slow rewarming. In experiments on parabiotic rats the controlled parabiotic circulation was clamped off during cooling, and this clamp was removed with rewarming. With slow rewarming the cold parabiotic did not recover; with rapid warming the cold parabiotic recovered and the control parabiotic showed no ill effects. Rapid warming of animals that were cooled to almost lethal temperatures resulted in greater recovery than slow warming.

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[1] Research in Aviation Medicine for the German Air Force (Report 251), Office of the Publication Board, Department of Commerce, Washington, D. C.

The information contained in the report was obtained by our investigators who visited the experimental laboratories in Germany and interviewed the research workers. The information is interesting chiefly because it offers a basis for comparison between our own state of knowledge with regard to problems associated with aviation and that of the enemy. On the whole, the German aviation science does not reveal any successful solving of problems that our own investigators have not tackled and solved.

FREUND'S EMULSIFIED VACCINES

In 1942 it was shown by Freund[1] and afterward confirmed by Friedewald that the immune response of animals may be prolonged and often elevated by injecting antigens in the aqueous phase of saline in liquid petrolatum emulsions.[1] Applying the emulsion technic Mudd and his associates of the University of Pennsylvania subsequently attempted to improve the immunologic response to dysentery vaccines.[2] Falba, a stabilizing agent derived from lanolin, was mixed by an electric stirrer with a saline suspension of alcohol killed Shigella paradysenteriae bacilli until a smooth paste was obtained. Liquid petrolatum was then added and stirred until the emulsion was well diffused. The proportion of the constituents, antigen in saline: falba: liquid petrolatum was 1:1:4 respectively.

Thirty-five inbred white Swiss mice were given a single subcutaneous injection of 20 micrograms of S. paradysenteriae cells in 0.15 cc. of saline solution. A similar group was injected with 20 micrograms of the same vaccine in 0.15 cc. of liquid petrolatum. At appropriate intervals mice from each group were exsanguinated and their pooled serum titrated for specific agglutinins. With the saline vaccine the agglutinin titer reached a maximum of 40 units by the end of one week. The titer then declined to 4 units by the end of six weeks, at which level it remained practically constant till the end of the experiment (twenty-two weeks). With the emulsified vaccine the titer rose to 256 units by the end of ten weeks and remained at this high level till the fourteenth week. After the fourteenth week the titer gradually fell to 32 units by the twenty-second week. The peak titer with the emulsified vaccine was thus six times the peak titer with the saline vaccine. By using larger doses with other groups of mice the peak titer was increased to as much as 1,280 units, or thirty times that of the saline control.

In a second series of tests with the same technic, groups of rabbits were injected subcutaneously with two doses of 25 micrograms each of the same vaccines. The doses were given three days apart. Sample bleedings were taken from the ear veins at appropriate intervals and the pooled serum was titrated by the mouse protective test. With the saline vaccine there was a twenty-fivefold increase in mouse protective titer by the end of two weeks. The titer then fell to a fivefold increase by the end of four weeks and to a twofold increase by the end of thirty weeks. With the emulsified vaccine the titer rose to a fiftyfold increase by the end of six weeks and remained at this high level for about six weeks. The titer then slowly decreased till the end of the experiment (thirty weeks). The Freund emulsion technic, therefore, increased the antibody response twofold and prolonged the period of effective immunity at least sevenfold.

Successful clinical trials of Freund's emulsion technic have been reported by Henle[3] of the department of pediatrics, University of Pennsylvania. Centrifugally concentrated influenza virus vaccines of type A and B were selected as the stock vaccines. Half of each vaccine was emulsified in 1 part of falba and 4 parts of liquid petrolatum. The other half of the same vaccine was diluted 1:4 in buffered saline solution to serve as a control. Eighty female subjects received subcutaneously 0.3 cc. of the emulsified vaccine either in a single dose or as a divided dose in two simultaneous injections. A similar group of 80 female subjects was injected in the same way with 0.3 cc. of the saline vaccine. Individuals of both groups were bled before vaccination and at the end of two weeks and of one, two, three and six months. The serums were tested individually by the Hirst technic[4] for their ability to inhibit chick red cell agglutination by influenza virus A and B.

With the saline vaccine the geometric mean of the individual antibody titers reached a maximum of about 250 units by the end of two weeks and then gradually decreased to about 150 units by the end of six months. At the end of six months less than 60 per cent of the individuals given this control vaccine had titers of more than 128 units. Clinical experience has shown that 128 units is the minimum effective prophylactic titer.[5] With the emulsified vaccines a maximum titer of about 700 units was reached by the end of two months, with but slight decrease in this titer by the end of six months. At the end of six months 95 per cent of all individuals given the emulsified vaccine had titers well above the minimum protective level (128 units).

In these clinical tests, nodules of varying dimensions could be palpated in the subcutaneous tissues of most individuals. These gradually decreased in size. In most cases they disappeared spontaneously by the end of the observation period. In only two of the one hundred and twenty injections with the emulsified vaccines were abscesses noted about two months after the injection. Only one of these had to be drained surgically. Henle regards this number as not too discouraging in the light of earlier experiments with alum precipitated toxoids.

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[1] Freund, Jules, and McDermott, Katherine: Proc. Soc. Exper. Biol. & Med. **49**: 548 (April) 1942. Freund, Jules, and Bonanto, Mary V.: J. Immunol. **48**: 325 (May) 1944. Friedewald, W. F.: J. Exper. Med. **80**: 477 (Dec.) 1944.

[2] Halbert, S. P.; Mudd, Stuart, and Smolens, Joseph: Proc. Soc. Exper. Biol. & Med. **60**: 17 (Oct.) 1945.

[3] Henle, Werner, and Henle, Gertrude: Proc. Soc. Exper. Biol. & Med. **59**: 179 (Nov.) 1945.

[4] Hirst, G. K.: J. Exper. Med. **75**: 49 (Jan.) 1942.

[5] Henle, Werner; Henle, Gertrude, and Stokes, Joseph Jr.: J. Immunol. **46**: 163 (March) 1943.

Application of Freund's emulsified antigens to allergic desensitization and to the production of commercial antiserums have not yet been reported. No fully satisfactory theory has thus far been proposed to account for the evident superiority of the emulsified vaccines.

Current Comment

PSYCHIATRIC EXAMINATION OF RUDOLF HESS

The role of the psychiatrist in the trial of the leading Axis war criminals has attained historical significance. This significance derives in a large measure from the fact that the psychiatric panel was appointed by the International Military Tribunal and reported its findings direct to that body. The panel consisted of three representative Russian psychiatrists, three British, one French and three American. The American psychiatrists, Dr. Nolan D. C. Lewis, professor of psychiatry, Columbia University College of Physicians and Surgeons, Dr. D. Ewen Cameron, professor of psychiatry, McGill University Faculty of Medicine, and Paul L. Schroeder,[1] Colonel, M. C., professor of psychiatry, University of Illinois College of Medicine, reported:

> We find, as a result of our examinations and investigations, that Rudolf Hess is suffering from hysteria, characterized in part by loss of memory. The nature of this loss of memory is such that it will not interfere with his comprehension of the proceedings, but it will interfere with his response to questions related to his past and will interfere with his undertaking his defense. In addition, there is a conscious exaggeration of his loss of memory and a tendency to exploit it to protect himself against examination. We consider that the existing hysterical behavior which the defendant reveals is also initiated as a defense against the circumstances in which he found himself while in England, that it has now become habitual and that it will continue as long as he remains under the threat of imminent punishment, even though it may interfere with his undertaking a more normal form of defense. It is the unanimous conclusion of the undersigned that Rudolf Hess is not insane at the present time in the strict sense of the word.

The psychiatrists were permitted to study these defendants as impartial workers utilizing the scientific method. The procedure removed the restriction imposed on the expert witness in civilian courts in both criminal and civil trials in that they served neither the prosecution nor the defense. Because such a procedure is well-nigh unique in criminal jurisprudence, it has historical interest. The appointment of psychiatrists from four geographically widely separated countries, speaking three different languages and coming from other cultures, assured a diversity of point of view and breadth of approach. The tribunal did not limit the psychiatrists to direct categorical replies; it authorized a report made in the form which commended itself to the examiners. This is likewise unique in court practice. The hearing of the tribunal on Nov. 30, 1945 concerning the mental state of the defendant was noteworthy on several counts. First among these is the remarkable degree of accord revealed in the reports of the groups of psychiatric experts representing the four countries responsible for the trial. This essential agreement between the groups, whose examinations, with the exception of that of the French, who participated in all three, were carried out separately, strengthens the conclusions of the psychiatric panel. The investigation of the defendant's behavior brought out his great instability as an important factor. Within the period of four years his record included a great variety of symptoms, delusions of persecution, two suicidal attempts, two periods of hysterical amnesia, various bodily symptoms such as abdominal cramps, which apparently are of neurotic origin, and finally his last dramatic outburst. These abnormalities of behavior have appeared and vanished as the pressures to which he has been subjected since he broke away from his established position in the Nazi hierarchy have waxed and waned.

CHOLERA STUDIES IN CALCUTTA

In a control experiment on the treatment of cholera in a highly endemic or epidemic area of India,[1] patients were taken in rotation as they were admitted to the hospital and assigned to the following groups according to the treatment given: A, sulfaguanidine; B, control; C, sulfadiazine; D, penicillin, and E, sulfadiazine and penicillin combined. All patients received supportive treatment in the form of intravenous, hypertonic and isotonic solution of sodium chloride and oral stimulants as indicated to offset dehydration, emaciation and circulatory failure. Group A received 3 Gm. of sulfaguanidine every four hours for three days and twice daily for the next three days, until a total of approximately 72 Gm. had been given. Group C received sulfadiazine 1 Gm. every four hours for the first day and 2 Gm. every four hours for the following two days, making a total of 30 Gm. Group D received an initial dose of 100,000 units of penicillin administered intramuscularly and 25,000 units every four hours thereafter for a total of 200,000 units. Group E received the combined treatments of groups C and D. It became apparent during the investigation that the usefulness of the therapeutic agents to the acutely ill patients could not be fully established because of the rapid progression into a state of shock, collapse or death before the drug could be effective in combating the infection. The salines administered were sufficient to offset dehydration, but the patients would lapse into shock and die of circulatory collapse. Results with plasma administration to combat shock and prevent collapse were much more encouraging. The circulatory response was definite, the heart sounds became strong and cyanosis disappeared quickly. The introduction of the plasma factor into a given group apparently lowered the death rate of that group.

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[1] Office of U. S Chief of Counsel, APO 403, U. S Army, Dec 14, 1945.

[1] Summary of a study taken from Epidemiology Unit No 50.

so as to give undue credit to the value of the drug used. It was believed, therefore, that a much more accurate picture could be obtained by reclassifying all treated cases and placing them in three groups: (1) patients treated with plasma in addition to chemotherapy, (2) patients receiving chemotherapy alone and (3) a control group consisting of all patients who had not received treatment or who had insufficient treatment or only supportive treatment. In the first group the death rate was zero, in the second group the death rate amounted to 1.1 per cent, while in the third group the death rate was 38.3 per cent. The value of chemotherapy was clearly demonstrated. The dramatic effect of plasma is still more evident if the shock or collapse cases are segregated and tabulated. There were, in all, 78 severely ill patients in that group. The results in the group showed a mortality rate of 95.8 per cent for the control group, 15.8 per cent for chemotherapy alone and no mortality in the group treated with plasma plus chemotherapy. It appears, therefore, that chemotherapy with supportive treatment will effectively lower the expected death rate in cholera.

PIONEER HEALTH TELECASTS

THE JOURNAL this week (page 802) announces experimental telecasts over television station W9XBK carried out by the Bureau of Health Education in cooperation with the station management. Television offers a medium which has some of the characteristics of radio and some of those of the stage, appealing primarily to the eye rather than to the ear as does radio. Television should be a particularly useful medium for the demonstration type of educational program. Television makes possible demonstration and exhibit, appealing both to the visual and to the auditory pathways to the brain. Procedures difficult to describe by word of mouth alone can be visually demonstrated by bringing before the camera such procedures as the taking of blood pressure, bandaging, first aid, blood counting and the use of the x-rays. The procedure in a television program may be briefly outlined by describing what is probably the first medical telecast, made by the Director of the Bureau of Health Education as a guest on the program entitled "Tea Time," by Harriet Hester. The program was opened by the two participants sitting at tea in a living room and beginning a conversation about nutritionally adequate lunches. They then adjourned to a kitchen setup, where with actual foods and models they set up on a table three nutritionally adequate lunches consisting of different kinds of sandwiches, fruit, milk, skim milk or cocoa and ice cream for dessert. The arrangement of these lunches in attractive patterns on a table was accompanied by an informal conversation in which the nutritional values of each item were illustrated. In similar manner, by demonstration and explanation with the use of enlarged charts, curves, models, pictures and actual objects, other topics can be demonstrated visually while they are being explained. For the present the television audience is limited. In metropolitan areas there are a few hundred television receiving sets. Telecasting is on an experimental basis. Methods and technics can be developed so that the medical profession will be ready in the future to make use of this new medium as it has used older mediums, such as the radio and the printed page, effectively.

DETECTING RADIATION HAZARDS

A recent release from the University of Rochester reveals many heretofore unpublicized aspects of research connected with the atomic bomb. The medical aspects of the research were organized in ten divisions. Among the most important was the development of methods to protect the employees; of the thousands employed in the plants not a single one was injured by any of the new and peculiar hazards of the work. Animal investigations on the toxicology and pharmacology of uranium compounds established criteria for tolerance levels. Methods of analyzing the urine of employees were devised to determine the extent of exposure and to estimate the amount of radiation exposure which could be tolerated by human beings. A method of taking finger impressions in wax was devised and employed on the workers handling radioactive materials in atomic plants. This permitted the determination of when, if at all, employees began to show changes in the skin as a result of contact with the materials handled. One division studied the blood of large groups of animals, completing over 100,000 analyses. Geneticists studied the effects produced on the offspring of mice and fruit flies which had been exposed to radiation. Some 277,000 mice and 50 million fruit flies were bred and observed. The application of the vast amount of data gathered by the University of Rochester group, of which that cited is only an example, can hardly be predicted, but the results will certainly be significant in the fields of metabolism, cancer, hematology and physical medicine.

DEATH STATISTICS AS INDEX OF EFFICIENCY OF CANCER SERVICE

In the United States cancer of the breast in 1943 caused 16,140 deaths, of the uterus 16,968, of the larynx 1,490, of the tongue 1,231, of the lip 661.[1] In Chicago in 1944 cancer of the breast caused 505 deaths, of the uterus 583, of the larynx 75, of the tongue 48, of the lip 11.[2] In 1942 cancer of the breast in England[3] caused 7,877 deaths, of the uterus 5,094, of the larynx 1,206, of the tongue 1,033, of the lip 290. These forms of cancer are curable in their early stages; the figures cited therefore indicate grave shortcomings in clinical cancer service. Many agencies are now urging on the public and the medical profession the vital importance of early diagnosis with prompt adequate treatment of cancer. Increasing stress is being placed on the need of more modern facilities for cancer service. States, cities and other communities as well as closed groups like the Veterans Administration in their death statistics of cancer have an invaluable index of the efficiency of cancer service.

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[1] Deaths from Cancer of Specific Sites in the United States—1943, Report of U. S. Bureau of the Census

[2] Communication from Board of Health, Chicago

[3] Discussion on Postwar Organization for the Treatment of Cancer, Proc. Roy. Soc. Med. 38:147 (July) 1945.

MEDICINE AND THE WAR

ARMY

ARMY AWARDS AND COMMENDATIONS

Captain Bernard J. Ryan

Capt. Bernard J. Ryan, Chateaugay, N. Y., while serving with the 506th Parachute Infantry of the 101st Airborne Division, was awarded the Silver Star and the Silver Star with Oak Leaf Cluster. He was also awarded the Bronze Star "for meritorious service in connection with military operations against an enemy of the United States in France, Holland and Belgium. He received the Purple Heart for wounds received in action at Bastogne, Belgium, in January 1945. According to the citation accompanying the Silver Star award, "Capt. Bernard J. Ryan, while serving with the Army of the United States, distinguished himself by gallantry in action. On Oct. 5, 1944, after two hours of constant mortar and artillery fire, his battalion was subjected to an attack by a strong enemy force in the vicinity of Opheusden, Holland. The battalion aid station located in the town was under heavy enemy fire from mortars, artillery and small arms. Captain Ryan, assistant battalion surgeon, continued operating the aid station despite the enemy fire and on several occasions made his way to the front lines to treat and evacuate wounded personnel in the midst of enemy machine gun and shell fire. He refused to move the aid station to the rear although it had received two direct hits, for such a move would detract from the efficient evacuation of casualties. Captain Ryan, disregarding enemy fire and the possibility of being captured, treated a large number of American and British casualties, saving many lives. When the battalion was relieved and he was ordered to set up his aid station in the rear, Captain Ryan remained at his front line post until every casualty had been evacuated. Throughout the action he displayed outstanding devotion to duty, skilful application of his superior knowledge and complete disregard for his personal safety. His actions were in accordance with the highest standards of the military service."

The award of the Oak Leaf Cluster to the Silver Star was accompanied by a citation giving a further example of Captain Ryan's gallantry: "On Jan. 13, 1945 in the vicinity of Foy, Belgium, the advance elements of an attacking company were subjected to heavy enemy artillery and small arms fire and sustained heavy casualties. After Captain Ryan had established his aid station in a house near the forward elements it became the target for enemy machine gun and small arms fire, which killed one man and wounded three. Disregarding the enemy fire, Captain Ryan was wounded. In spite of his wound, he continued to care for his patients and to direct the functions of the aid station. The outstanding devotion to duty and courage of Captain Ryan proved instrumental in saving the lives of many American soldiers. His actions were in accordance with the highest standards of the military service." Dr. Ryan graduated from Harvard Medical School, Boston, in 1940 and entered the service Feb. 11, 1943.

Captain David F. Kohn

Capt. David F. Kohn, Mount Pocono, Pa., was recently commended by Brig. Gen. R. F. Kernan, commanding officer of the 27th Division Artillery. Stated General Kernan in the citation accompanying the commendation, "It has been brought to my attention that during the battles for Saipan and Tinian Islands, Marianas Group, from June 17 to July 31, 1944, you performed your duties as battalion surgeon in a skilful and highly commendable manner. Your devotion to duty and untiring labor no doubt kept many men in action who might otherwise have been causalties. Your performance as a soldier and a medical officer bring credit both to your profession and to the military service." Dr. Kohn graduated from the University of Pennsylvania School of Medicine, Philadelphia, in 1931 and entered the service Feb. 1, 1941.

Lieutenant Colonel Bert Bradford Jr.

Lieut. Col. Bert Bradford Jr., Charleston, W. Va., was recently awarded the Legion of Merit "for exceptionally meritorious conduct in the performance of outstanding service, as chief of surgical service, 45th Evacuation Hospital, from Aug. 2, 1944 to May 10, 1945. Lieutenant Colonel Bradford skilfully supervised the work of his section and teams attached to his unit in a manner which insured the highest quality of surgical treatment to wounded men. Particularly noteworthy was his introduction in the hospital of the most recent developments in the treatment of wounds of the hand and vascular injuries. By his demonstration of professional ability, sound judgment and untiring effort Lieutenant Colonel Bradford contributed greatly to the success of his unit's operation, and his services reflect highest credit on himself and the armed forces of the United States." Dr. Bradford graduated from Washington University School of Medicine, St. Louis, in 1935 and entered the service Sept. 25, 1940.

Colonel Johnson McGuire

For his record as medical consultant for the Fifth Service Command, Col. Johnson McGuire, Cincinnati, was recently awarded the Legion of Merit. The citation accompanying the award stated that "by reason of his unfailing tact, judgment and superior professional qualifications Colonel McGuire was, in a great measure, responsible for the outstanding quality of medical treatment by hospitals of the Fifth Service Command." Dr. McGuire graduated from Johns Hopkins University School of Medicine, Baltimore, in 1924 and entered the service June 19, 1943.

Captain Monroe Cohen

Capt. Monroe Cohen, Brooklyn, was recently awarded the Bronze Star for distinguished service as battalion surgeon "in connection with military operations against the enemy of the United States from July 4, 1944 to May 1, 1945 in France, Luxemburg, Belgium and Germany." Dr. Cohen graduated from Long Island College of Medicine, Brooklyn, in 1942 and entered the service July 3, 1945.

Captain Stanford Borne

Capt. Stanford Borne, Brooklyn, was recently awarded the Bronze Star "for meritorious service in connection with military operations against the enemy from March 8, 1945 to April 15, 1945 in Germany. As clearing platoon leader Captain Borne distinguished himself by his untiring efforts, expert medical treatment and evacuation of the wounded, under adverse conditions." Dr. Borne graduated from Long Island College of Medicine, Brooklyn, in 1941 and entered the service July 1, 1942.

Colonel Harry Penn Harper

Col. Harry P. Harper, Rochester, Minn., was recently awarded the Legion of Merit for establishing the first field hospital across the Rhine. Dr. Harper graduated from the University of Minnesota Medical School, Minneapolis, in 1937 and entered the service July 31, 1941.

Captain Nicholas J. Chiara

The Bronze Star and Purple Heart awards were recently presented to Capt. Nicholas J. Chiara, Brooklyn, for conspicuous service on Mindanao in June 1945. Dr. Chiara graduated from the Long Island College of Medicine, Brooklyn, in 1941 and entered the service July 1, 1942.

Major Manuel A. Bergnes

Major Manuel A. Bergnes, Teaneck, N. J., was recently awarded the Silver Star for action on Mindanao. Dr. Bergnes graduated from Long Island College of Medicine, Brooklyn, in 1941 and entered the service July 1, 1942.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Pilkington, John S., Capt., Uniontown.
Word, Samuel B., Col., 812 10th St., SW, Birmingham.
Zieman, John A., Capt., Route 1, Box 428, Mobile.

Colorado

Fowler, Harmon L., Lt. Col., 1279 Ogden St., Denver.
Freeman, Leonard, Major, 300 S. Gaylord St., Denver.
Hall, Henry L, Major, 1670 Williams, Denver.
Kimball, Merritt H., Lt. Col., 100 Metropolitan Bldg., Denver.
Luther, Ross D., Capt., 202 E. Bennett Ave., Cripple Creek.
McKeen, Harold R. Jr., Capt., 966 S. Josephine St., Denver.
Ozamoto, Isamu, Capt., 830 18th St., Denver.
Perkins, James M., Capt., 356 Marion St., Denver.
Plank, Joseph R., Major, 200 S. Eudora St., Denver.
Ramo, Leon, Lt. Col., J.C.R.S. Sanatorium, Spivak.
Rosenbloom, Meyer R., Capt., 768 Colorado Blvd., Denver.
Van Der Schouw, H. M., Capt., Lutheran San., Wheat Ridge.
Wade, Theodore E., Major, 720 W. Pitkin St., Pueblo.

Connecticut

Panettieri, Andrew J., Capt., 3084 Main St., Bridgeport.
Pepe, Anthony J., Capt., Norwich State Hospital, Norwich.
Pinn, Abraham S., Major, 75 Sherman Avenue, New Haven.
Sirica, Alphonse E., Capt., 22 McDonald Ave., Waterbury.
Smith, Frederick F., Capt., 84 Dixwell Ave., New Haven.
Thompson, Lloyd J., Col., 128 Beach Avenue, Woodmont.
Zujko, Alphonse J., Capt., 190 Broad St., New Britain.

District of Columbia

Chase, William W., Lt. Col., 1813 Parkside Drive, Washington.
Custis, Horace H., Capt., 1839 Irving St. N.W., Washington.
Kassan, Robert J., Major, 4503 4th St. N.W., Washington.
Kistin, Albert D., Capt., 2205 42d St. N.W., Washington.
Lafsky, Benjamin P., Lt. Col., 5421 7th St. N.W., Washington.
Lomack, C. L., 1st Lt., 2911 Sherman Ave. N.W., Washington.
MacBrayer, Reuben A., Lt. Col., 3733 T St. N.W., Washington.
Thompson, J. L. Jr., Lt. Col., 1735 20th N.W., Washington.

Florida

Borland, James L., Major, 1786 Challen Ave., Jacksonville.
Boughton, Herman, Major, 6601 Brevity Lane, Miami Beach.
Clark, Samuel J., Capt., 128 Patten Heights, Lakeland.
Edwards, George W. II, 1st Lt., 309 Cherokee Drive, Orlando.
Irwin, Thomas M., Major, 322 E. Central Ave., Orlando.
Jenkins, Leslie M., Capt., 3232 Emathla St., Miami.
Lytle, Carl S., Lt. Col., 29 Holder Block, Ocala.
Mitchell, William S., Major, 712 Daniel St., Orlando.
Reeser, Richard Jr., Lt. Col., 218 University Blvd., Daytona Beach.
Smoak, Philip L., Capt., 1907 Oakmont Ave., Tampa.
Snelling, William R., Major, Fernandina.
Soskis, Elbert J., Capt., Mulberry.
Torrado, Rene A., Capt., 541 Lincoln Road, Miami Beach.
Watson, Francis M., Lt. Col., 207 N. 5th St., Chipley.

Georgia

Etheridge, William N., Capt., 33 Maddox Drive N.E., Atlanta.
Fleming, Carlton A., Major, 1008 Hall Avenue, Tifton.
Hatcher, Milford B., Major, The Massee, 401 College, Macon.
Huie, Lynn M., Capt., Monroe.
McWhorter, Myrtus R., Capt., 1528 32d St., Columbus.
Nunnally, Harry B., Capt., Broad St., Monroe.
Paulk, James R., Capt., Moultrie.
Roberts, Luther J. Jr., Capt., Manchester Hotel, Manchester.
Porter, John E., Major, 501 E. 53rd St., Savannah.
Ragland, Frederick B., Capt., 205 King St., Dalton.
Rosen, Emanuel F., Capt., 609 W. 37th St., Savannah.
White, Cecil G. Jr., Capt., 2772 Alpine Road, Atlanta.

Indiana

Bartle, James L., Capt., 137 S. Franklin, Knightstown.
Baxter, James W. Jr., Capt., 1201 E. Spring St., New Albany.
Bennett, Jene R., Capt., 310 Pennsylvania Ave., Plymouth.
Blemker, Russell M., Major, 215 N. Franklin St., Greensburg.
Brown, Kenneth H., Major, 1654 Hedden Park, New Albany.
Browning, William M., Major, Indianapolis City Hospital, Indianapolis.
Crain, James W., Capt., Brooklyn.
Dittmer, Jack E., Major, 54 Lincolnway, Valparaiso.
Eicher, Palmer O., Capt., Belmont Road, Decatur.

Indiana—Continued

Ferrell, Mars B., Capt., 2035 N. Meridian St., Indianapolis.
Fullerton, Robert L., Capt., 1307 E. Michigan St., Indianapolis.
Gilliatt, James P., Major, 204 S. High St., Salem.
Graf, Jerome A., Capt., Bloomfield.
Kissinger, Knight L., Capt., 207 S. Wayne, Angola.
Lenk, George G., Capt., 2007 Maumee Ave., Fort Wayne.
McCarty, Virgil, Major, 403 W. Spruce, Princeton.
Price, Douglas W., Major, 402 N. Madison St., Nappanee.
Price, Sidney, Capt., 1137 W. 6th St., Marion.
Pyle, Harold D., Major, 115 N. Sunnyside Ave., South Bend.
Raphael, Isidor, Major, 305 Cadick Apts., Evansville.
Rothberg, Maurice, Major, 114 Wayne Pharmacal Bldg., Ft. Wayne.

Iowa

Brobyn, Thomas E., Major, 1309 Broad St., Grinnell.
Burch, Earl S., Capt., Dayton.
Coughlan, Charles H., Major, 706 Warden Apts., Ft. Dodge.
Foss, Robert H., Capt., Remsen.
Friedman, Herbert P., Capt., 711 E. Burlington, Iowa City.
Johnston, Charles H., Major, 24 W. 34th St., Des Moines.
Kast, Donald H., Capt., 4904 Pleasant St., Des Moines.
Kuntz, George S., Capt., 714 25th St., Sioux City.
Lowry, Frederick C., Capt., 1206 Yewall St., Iowa City.
Magaret, Ernest C., Capt., 416 N. Walnut St., Glenwood.
Nicholson, Clyde G., Capt., 301 S. Hill Avenue, Spirit Lake.
Putz, Arthur E., Major, Edgewood.
Robertson, Treadwell A. Jr., Capt., 211 W. 5th St., W. Liberty.
Robinson, Van Cooper, Major, 918 Des Moines St., Des Moines.
Rodawig, Donald F., Major, Spirit Lake.
Ryan, Martin J., Major, 3712 Jones, Sioux City.
Schulz, Arthur W., Lt. Col., Vet. Admin., Des Moines.

Kansas

Finney, Guy A., Lt. Col., 300 Woodlawn Avenue, Topeka.
Gradinger, Billens C., Major, 219 Poplar St., Halsted.
Hatcher, Albert C., Capt., 508 N. Washington, Wellington.
Hatton, Lloyd W., Capt., 709 Highland, Salina.
Huntley, Leslie L., Capt., 612 State St., Larned.
Irby, Pratt, Capt., 209 S. Main St., Ft. Scott.
Jones, Sam, Capt., 1825 Ash St., Hutchinson.
Loyd, Dale U., 1st Lt., St. Francis Hospital, Wichita.
Maser, George R., Capt., 5105 W. 65 Ter., Overland Park.
Nienstedt, John F., 1st Lt., Hartford.

Kentucky

Fearing, Oliver H., Capt., 2536 Algonquin, Ashland.
Goldstein, Isadore, Capt., 105 E. Oak St., Louisville.
Hurt, Lawrence E., Major, 169 Romany Rd., Lexington.
Kanner, Irving F., Major, 208 Security Trust Bldg., Lexington.
Lawson, Reuben N., Major, 139 Broadway, Lawrenceburg.
Mullen, Alvin B., Lt. Col., Waverly Hills.
Oettinger, Leon Jr., 1st Lt., 311 S. Hanover Avenue, Lexington.
Rawlings, Frederick P. Jr., 1st Lt., Trenton.

Louisiana

Bombet, Charles N., Major, 408 S. 10th St., Baton Rouge.
Bowie, Eleazar R., Lt. Col., 5345 St. Charles, New Orleans.
Bres, Edward S. Jr., Capt., 388 Broadway, New Orleans.
Brown, James F., Capt., 639 Boulevard, Lake Charles.
Butker, Henry G., Major, 1201 Canal Bldg., New Orleans.
Casteix, Martial B. Jr., Major, 3025 Carondelet St., New Orleans.
Dozier, Horace B., Major, Charity Hospital, New Orleans.
Holloman, Walter G., Major, City Hall, Monroe.
Lindner, Henry J., Major, 710 N. Carrollton Ave., New Orleans.
Marks, Hippolyte P. Jr., Capt., 1012 Broadway St., New Orleans.
Martin, Jean B. Jr., Capt., St. Charles Parish, Hahnville.
Nabos, John F., Capt., 2829 Bruxelles St., New Orleans.
Nicholas, Stuart N., Capt., 1729 Line Ave., Shreveport.
Ochs, Louis Jr., Lt. Col., 2420 State St., New Orleans.
Ogaard, Adolph T., Major, 1430 Tulane Avenue, New Orleans.
Prejean, James L., Lt. Col., Sunset.
Rogers, Eugene S., Capt., 112 College St., Minden.
Salatich, Malter A., Capt., 1304 S. Carrollton Ave., New Orleans.
Sauer, Curtis E., Major, 208 Williams Blvd., Kenner.
Sherwood, Thomas C., Capt., Southern Baptist Hospital, New Orleans.
Snelling, John G. Jr., Lt. Col., 2101 Marie Place, Monroe.

PHYSICIANS SEPARATED FROM SERVICE

Maryland

Jones, Arthur F., Capt., 329 Cumberland St., Cumberland.
Kleiman, Norman R., Capt., 1101 N. Fulton Ave., Baltimore.
Post, Laurence C., Capt., 7105 York Road, Baltimore.
Rosenbaum, Irving Jr., Major, 423 Fayette St., Cumberland.
Sewell, Webster, Capt., Norbeck RFD, Rockville.
Turner, Thomas B., Col., 316 Paddington Road, Baltimore.
Urist, Marshall R., Major, 508 N. Broadway, Baltimore.
Watson, William G., Major, 612 N. Washington St., Baltimore.

Massachusetts

Barrett, Raymond L., Lt. Col., 23 Maple St., Springfield.
Bateman, William A., Major, 528 Andover St., Lawrence.
Blouin, Alfred R., 1st Lt., Beanes' Lane, Northbridge.
Bourgeault, Oscar A., Capt., 187 Chestnut St., Holyoke.
Bradford, Charles H., Capt., 220 Beacon St., Boston.
Brown, Morton G., Lt. Col., 250 Corey Rd., Brighton.
Buono, Charles L., Capt., 98 Beverly Rd., Worcester.
Burnett, Charles H., Major, Mass. General Hospital, Boston.
Bush, Charles W. Jr., Capt., 293 Eliot St., Milton.
Chofnas, Irving, Capt., 30 Walnut Park, Roxbury.
Chute, Richard, Lt. Col., 78 Upland Rd., Brookline.
Clark, Theodore D., Capt., 101 Highland Ave., Newtonville.
Clement, Howard R., Major, 97 Binney St., Boston.
Collins, Wylie L., Major, 17 Broad St., Nantucket.
DeCesare, Frank J., Capt., 96 Vermont St., Methuen.
Dodge, Richard S., Capt., Greene St., Canton.
Duffy, Frank K., Capt., 73 Pine St., Palmer.
Dyer, Edward C., Major, Children's Hosp., Boston
Evans, Lloyd R., Capt., 360 Riverway, Boston.
Flumerfelt, John M., Major, 13 Holyoke St., Cambridge.
Flynn, Simon A., Capt., 79 W. Forster St., Melrose.
Friend, Dale G., Col., 114 Riverway St., Boston.
Goggio, Alfred F., Major, Peter Bent Brigham Hosp., Boston.
Guralnick, Eugene, Major, 87 Maple St., Roxbury.
Howard, Donald O., Major, Mass. Eye & Ear Infirmary, Boston.
Jaffee, Isadore H., Capt., 1705 Commonwealth Ave., Brighton.
Johnson, Elwood G., Major, 8 Tavern Rd., Waltham.
Kavanah, James S., Major, 81 Arnold St., Methuen.
Kneisel, John J., Major, 721 Huntington Avenue, Boston.
Kochanek, Joseph M., Capt., 34 Kazbeck St., Indian Orchard.
Kyle, Laurence H., Capt., E. Main St., Huntington.
Lightfoot, John H., 1st Lt., 78 Madison St., Fall River.
McGahey, Claud E., Capt., 14 Old Dee Rd., Cambridge.
Maher, Joseph J., Capt., 228 Brook Rd., Milton.
Meister, Abraham J., Lt. Col., 748 Bridge St., Lowell.
O'Brien, Walter M., Major, 1230 Hancock St., Quincy.
Olinick, Stanley L., Capt., 110 Madison St., Fall River.
Reder, Benjamin, Capt., 1022 Robeson St., Fall River.
Richards, Robert L., Major, 93 Marshall St., Watertown.
Rogers, Augustine T., Capt., 11 Summit St., Hyde Park.
Rosenheim, Frederick, Capt., 1 Clover St., Belmont.
Rubin, Abraham L., Lt. Col., 29 Commonwealth Ave., Pittsfield.
Ryan, Thomas F., Capt., Housatonic.
Simeone, Fiorindo A., Lt. Col., Peter Bent Brigham Hospital, Boston, (Home: Sackett Point Road, North Haven, Conn.)

Michigan

Anderson, Walter L., Major, 4411 Kensington Ave., Detroit.
August, Harry E., Major, 538 Maccabees Bldg., Detroit.
Bicknell, Edgar A., Capt., 13225 Birwood Ave., Detroit.
Blocksma, Ralph, Capt., 739 S. Prospect Ave., Grand Rapids.
Boyd, John O. Jr., Capt., 1206 Bethune W., Detroit.
Brooks, Nathan, Capt., 13725 Dexter Blvd., Detroit.
Burton, Horace F., Capt., East Tawas.
Clifford, Robert P., Capt., 10621 Lakepointe St., Detroit.
Diskin, Herman E., Capt., 3227 Fullerton Ave., Detroit.
Dowd, Bennard J., Capt., 1702 Greenlawn Ave., Kalamazoo.
Drolett, Donald J., Capt., 1623 W. Main St., Lansing.
Eaton, Robert M., Capt., 243 Aurora St. S.E., Grand Rapids.
Faulconer, Albert Jr., Major, 330 Walnut St., Rochester.
Fisher, Gordon F., Capt., 510 S. Jefferson St., Hastings.
Hall, Robert F., Capt., 1418 Fourth St., Bay City.
Harrington, Lawrence F., Capt., 5205 S. Martindale St, Detroit.
Knoch, Hubert S., Capt., 14149 E. Jefferson Ave., Detroit.
Koop, Chester S., Capt., Pinecrest Sanatorium, Powers.
La Core, Ivan A., Major, 18968 Northlawn, Detroit.
Levin, David M., Capt., 8821 Dexter Blvd., Detroit.
Patmos, Bernard, Capt., 138 E. Maumee, Adrian.
Schoenfeld, John B., Lt. Col., Cranbrook School, Bloomfield Hills.
Thieme, Elliott T., Lt. Col., 3 Geddes Heights, Ann Arbor.
Tuttle, Jay F., Major, New Berry State Hosp., Newberry.

Minnesota

Anderson, William H., Capt., 6th Avenue, E., Alexandria.
Ausman, Duane R., Capt., 1531 Portland Ave., St. Paul.
Berkson, Joseph, Col., 437 14th Ave. S.W., Rochester.
Boyer, Samuel H. Jr., Major, 2725 E. 6th St., Duluth.
Breslow, Lester, Capt., 24 11th Ave. N.W., Rochester.
Christensen, Llewellyn E., Capt., 214 Manitou St., Northfield.
Condon, William B., Major, Mayo Clinic, Rochester.
Dry, Thomas J., Major, Mayo Clinic, Rochester.
Fischer, Verrill J., Capt., 600 S. Brimhall St., St. Paul.
Graham, Frederick M., Capt., Mayo Clinic, Rochester.
Helferty, John K., Major, Tracy.
Hilger, David W., Major, 121 6th Ave. N.W., Rochester.
Lillie, John C, Major, % Midfields, R 2, Rochester.
Nickel, Walter R., Major, Mayo Clinic, Rochester.
Richardson, Robert J., Capt., Rushford.
Saliterman, Bernard I., Capt., 1423 Lakeview Ave., Minneapolis.
Scherling, Sidney S., Lt. Col., Taylors Falls.
Smith, Lucian A., Major, Mayo Clinic, Rochester.
Thompson, Floyd A., Major, 245 S. Snelling Ave., St. Paul.

Mississippi

Barron, James, Capt., 404 Alexander St., Indianola.
Beck, Otis H., Major, 1210 Main St., Greenville.
Boggess, Julian E. Jr., Capt., Macon.
Bolton, Eldon L., Lt. Col., 1118 West Beach, Biloxi.
Crull, Luther P., Capt., 1839 St. Mary St., Jackson.
Davidson, Arthur C., Capt., 1303 Main St., Greenville.
Davis, Floyd M., Capt., Van Vleet.
McRae, Matthew E., Capt., 1412 7th Ave., Laurel.

Missouri

Bondurant, Alpheus J., Major, Vet. Admin. Fac., Jefferson Barracks.
Boots, Roger H., Capt., 4954 Columbia St., St. Louis.
Dietrich, Karl D., Major, 16 Bingham Road, Columbia.
Ellis, Ralph C., Major, 3723 Wyoming, Kansas City.
Harbison, Samuel P., Capt., 600 S. Kingshighway, St. Louis.
Harris, Russell D, Lt. Col., 1638 S. Maple St., Carthage.
Keown, Kenneth K., Major, RFD 2, Tebbetts.
Knight, William A. Jr., Capt., 8528 Hall's Ferry Rd., St. Louis.
Martin, Charles E., Capt., 4501 Parkdale Drive, Normandy.
Morse, Marvin W., Capt., 2832 Doniphan St., St. Joseph.
O'Leary, James L., Major, 4931 MacPherson Ave., St. Louis.
Potashnick, Robert, Capt., 5879 Maffitt Ave., St. Louis.

Nebraska

Cochran, Robert M., Major, 371 N. 33rd, Lincoln.
Corkle, Robert F., Capt., 2488 N. 47th Avenue, Omaha.
Dent, Townsend E., Capt., 402 S. Sycamore St., North Platte.
Ewing, Ben E., Capt., 923 S. 10th St., Nebraska City.
Green, Ralph D., Major, Vet. Adm., Lincoln.
Hall, Robert W., 1st Lt., 561 S. 35th Avenue, Omaha.
Holiday, Andrew T., Capt., 1834 Prospect St., Lincoln.
Lovgren, Robert E., Capt., 2444 Newport Avenue, Omaha.
Purvis, Donald F., Capt., Fullerton.
Reed, Elmer B., Capt., 3240 W St., Lincoln.
Sharrar, Lynn E., Major, 605 Security Mutual Bldg., Lincoln.
Spradling, Richard L., Capt., State Hosp., Lincoln.
Still, Richard M., Major, 417 Woodman Bldg., Lincoln.
Thompson, Charles E., Major, 677 J. E. George Blvd., Omaha.
Victor, Samuel A., Capt., 112 N. 38th St., Omaha.

North Carolina

Eckbert, William F., Capt., Crossnore.
Erwin, Evan A. Jr., Capt., Laurinburg.
Jones, Craig S., Major, N. Main St., Cliffside.
Martin, Ben F., Capt., Roxboro.
Mock, Charles G., 1st Lt., 728 Mocksville Avenue, Salisbury.
Query, Luke W. Jr., 1st Lt., Route 4, Charlotte.
Nanzetta, Leonard, Capt., 1915 Perry Ave., Wilmington.
Shuford, Jacob H., Capt., 1540 18th St., Hickory.
Tatum, Roy C., Col., 332 S. Center St., Statesville.

Oklahoma

Best, Ralph L., Capt., 1612 E. 12th St, Tulsa.
Cordonnier, Byron J., Major, 1406 W. Wabash, Enid.
Darrough, James B., Capt., 101 S. Wilson, Vinita.
Davis, Wesley W., Capt., Fort Cobb.
Deaton, Andy N., Major, 1301 S. Seminole St., Wewoka
Emenhiser, Lee K., Lt. Col., 1106 M. Arts Bldg., Oklahoma City.
England, Myron C., Major, 1011 Main St., Woodward.
Gibbs, Allen G., Lt. Col., 2321 N.W. 25th St., Oklahoma City.
Gore, W. A, Major, U. S. Vet. Adm. Fac. Hosp., Muskogee.

PHYSICIANS SEPARATED FROM SERVICE

Oklahoma—Continued

Hammond, James H., Lt. Col., 6521 E. Latimer Pl., Tulsa.
Munal, John E., Major, 408 Country Club Drive, Holdenville.
Rucker, Ralph W., Major, 1429 Valley Rd., Bartlesville.
Shaw, James F., Capt., Box 246, Wetumka.
Shircliff, Edward E., Major, 121 N.W. 14th, Oklahoma City.
Waltrip, Powhatan M. Jr., Major, 615 Jefferson, Lawton.
Williams, Gordon D., Capt., 424 N. 5th St., Weatherford.

Rhode Island

Campbell, Walter E., 1st Lt., 28 Ravenswood Ave., Providence.
Celestino, Pasquale J., Capt., 19 Pearl St., Westerly.
Conde, George F., Capt., 110 Cathedral Ave., Providence.

South Carolina

Ball, Robert W., Lt. Col., 925 Main St., Columbia.
Brodie, Joseph E., Capt., 124 Sumter Court, Greenwood.
Burn, Edward M., Major, 133 Spring St., Charleston.
Converse, Joseph I., Capt., 709 Crescent Ave., Greenville.
Daniel, John F., Major, 1021 S. Main St., Greenwood.
Driscoll, Robert H., Lt. Col., 915 Glenn St., Newberry.
Harrison, Albertus F., Major, McLeod Infirmary, Florence.
Jeanes, James G., Capt., 89 W. Main St., Clinton.
Kline, Bernard, Capt., Hardeeville.
McFall, Thomas C., Capt., 150 Ashley Ave., Charleston.
Owens, Frank C., Major, 431 Edisto Ave., Columbia.
Price, George W. Jr., Major, 409 Andrews Bldg., Spartanburg.
Smith, Daniel L. Jr., Capt., 166 Alabama St., Spartanburg.

Tennessee

Dougall, John Mac, Lt. Col., 902 Madison Avenue, Memphis.
Fields, James O., Capt., 405 Highland, Milan.
Finks, Robert M., Major, Vanderbilt Hosp., Nashville.
Grizzard, Thomas, Major, 2005 Blakemore Avenue, Nashville.
Hendrick, Jim G., 1st Lt., 61 N. Tucker, Memphis.
Hickey, Homer D., Capt., 501 Kilmer St., Chattanooga.
Jenkins, Harry H., Col., 1931 Laurel Avenue, Knoxville.
Loveless, J. A., Major, Davidson Co. Health Dept., Nashville.
Mann, Malcolm J., Capt., Vanderbilt Hosp., Nashville.
Massengill, Michael D. Jr., Capt., 422 Shelby St., Kingsport.
Miller, Cleo M., Lt. Col., Shelton Avenue, Nashville.
Murphey, Francis, Lt. Col., 899 Madison Avenue, Memphis.
Polk, Raymond W., Capt., 102 N. Belvedere, Memphis.
Rainey, William T., Lt. Col., Tiptonville.
Ransmeier, John C., Capt., Vanderbilt U. Hosp., Nashville.
Richardson, Guy C., Major, 219 Lynwood St., Bristol.

Texas

Alfieri, Anthony L., Capt., 3427 Cedar Springs, Dallas.
Arnim, Landon C., Capt., 123 Oleander St., Corpus Christi.
Atmar, Robert C., Major, 206 Canterbury, San Antonio.
Austraw, Henry H., Capt., 2224 Dorrington St., Houston.
Barckman, William H., Capt., 596 N. Clinton Ave., Stephenville.
Basom, William C., Major, 410 Roberts-Banner Bldg., El Paso.
Block, Harold M., Major, 709 Spring St., Weatherford.
Bohmfalk, Stanley W., Capt., 2506 Avenue C, Wichita Falls.
Borough, Lester D., Major, 3532 Kent, Ft. Worth.
Breck, Louis W., Major, 1800 Elm St., El Paso.
Brooks, Jesse M., Capt., Box 389, Atlanta.
Buchholz, Ransom R., Major, Georgetown.
Byram, Dan H., Major, 3137 8th St., Port Arthur.
Carroll, Roland B., Major, 401 5th Avenue, Port Arthur.
Coggeshall, Howard C., Major, 3701 Maple Avenue, Dallas.
Dreibrodt, Ben A., Capt., 433 Hammond Ave., San Antonio.
Du Boise, Otho K., Capt., 113 S. Main St., Lockhart.
Dufner, Romie M., Capt., 1024 Steves Ave., San Antonio.
Gill, James P., Lt. Col., 519 Med. Professional Bldg., Corpus Christi.
Glover, Frank S., Capt., 411 W. Alabama, Houston.
Gray, George A., Major, City Hall, Abilene.
Jenkins, Joseph N. Jr., Capt., 1220 N. 6th St., Waco.
Jenson, Alfred J., Capt., 2305 10th St., Lubbock.
Johnson, Max E., Capt., 133 E. Huisache St., San Antonio.
Jordan, Robbie C., Major, Austin State Hosp., Austin.
Klanke, Charles W., Capt., 8028 Park Place Blvd., Houston.
Lindsey, David C., Capt., 1010 E. Allen Ave., Fort Worth.
Littell, George S., Lt. Col., 3520 Fairmount Ave., Dallas.
McKay, Haden E. Jr., Capt., Humble.
Mood, Francis A., Capt., Nocona.
Pierce, Alexander W., Capt., 3512 Lake Park Drive, Box 936, Wichita Falls.
Powell, J. C. Jr., Capt., San Antonio State Hosp., San Antonio.
Renshaw, Horace S., Major, 2913 Alton Rd., Fort Worth.
Rosenblatt, W., Lt. Col., 126 Pembroke Lane, Wichita Falls.

Texas—Continued

Simonson, Sigwert W., Capt., Dallas.
Villareal, Leopoldo, Major, 512 Gregory Way, El Paso.
Wright, Harry E., Lt. Col., Mineral Wells.
Wyatt, Malcolm H., Capt., 1500 Jefferson St., Amarillo.

Utah

Ball, John M., Capt., 735 Emerson Ave., Salt Lake City.
Berman, Harry, Major, 218 First Security Bank Bldg., Ogden.

Vermont

Allen, Howard H., Capt., Greensboro.
Crandall, Albert J., Major, 24 Maple St., Essex Junction.
Emmons, James E., Major, 85 Main St., Newport.
Ferriter, William B., Capt., 25 Spruce St., Brattleboro.
Hammond, James P., Major, 34 Mt. Anthony Rd., Bennington.
Hyde, Edgar R. Jr., Capt., 6 Byam St., Northfield.
Hyde, Robert W., Major, Fairfax.

Virginia

Amole, Charles V., Capt., 907 S. St. Asaph St., Alexandria.
Babb, Emerson M., Capt., Ivor.
Berlin, Erwin S., Capt., 350 W. Main St., Wytheville.
Bowers, George S., Major, Rustburg.
Brown, William A. Jr., Capt., 101 Mt. Vernon, Portsmouth.
Brownley, Harvey C., Lt. Col., 3323 Woodridge Place, Lynchburg.
Colton, Warren A. Jr., Capt., USVH, Kecoughtan.
Ham, George C., Capt., 1617 Oxford Rd., Charlottesville.
Hurt, John O., Capt., 419 Creston Rd., Roanoke.
Jackson, Roger A., Major, 213 Parkway Avenue, Winchester.
Lisle, Leslie M., Capt., 815 Prince St., Alexandria.
Mallett, Robert B., Capt., Orange.
Montague, John W., Capt., RFD 1, Salem.
Packer, Bernard D., Major, 3904 Seminary Ave., Richmond.
Page, Sidney G. Jr., Major, 5820 Lakeside Ave., Richmond.
Richardson, James S., Capt., Richlands.
Sollod, Norman, Capt., 22 Center Hill, Petersburg.

Washington

Buckner, Hubbard T., Col., 208 Cobb Bldg., Seattle.
Clanton, Edward L., Major, Rockford.
Clark, Thomas H., Capt., King County Hosp., Seattle.
Hildebrand, Leslie E., Capt., 1708 E. 8th Ave., Spokane.
Hopke, Harold LeVerne, Capt., 813 Murdock, Sedro Woolley.
Jared, Myron S., Lt. Col., 2205 Warren Ave., Seattle.
MacKay, Alexander R., Capt., 1309 Ferris Court, Spokane.
Pence, Lawrence C., Major, 722 E. 20th Avenue, Spokane.
Phillips, James Y., Capt., 2517 42nd Avenue, North, Seattle.

West Virginia

Beaumont, Godfrey L., Capt., 2d Ave., New Cumberland.
Chandler, Arthur C., Capt., 1562 Virginia St., Charleston.
Cooke, William L., Major, 5 Roller Rd., Charleston.
Doyle, John E., Major, Greenwood.
Frye, Robert R., Capt., 117 Furbes Ave., Mannington.
Jones, Robert H., Lt. Col., 42 Country Club Road, Fairmont.
Pushkin, Willard, Capt., 1528½ Lewis St., Charleston.

Wisconsin

Becker, Walter T., Lt. Col., 4144 N. 15 St., Milwaukee.
Brock, Elmer H., Major, 4574 W. Bluemound Rd., Milwaukee.
Brown, Robert J., Capt., Cazenovia.
Christiansen, Rudolph E., Capt., 805 E. 5th St., Superior.
Erdmann, Norman C., Capt., 1522 Torrison Drive, Manitowoc.
Fast, John G., Capt., St. Croix Falls.
Greiber, Marvin F., Lt. Col., Fennimore.
Ingwell, Clayton L., Capt., Deerfield.
Kaiser, Lloyd F., Major, 411 E. Frederick St., Rhinelander.
Kaufman, Bernhard, Capt., 201 E. Armour Ave., Milwaukee.
Kendall, Thurman E., Capt., 2362 N. 91st St., Wauwatosa.
Klotz, Arthur P., Capt., Gillett.
Lambert, Joseph W., Capt., 726 7th Avenue, Antigo.
Levin, Harlan M., Capt., Box 207, Darien.
Perssion, Leo B., Capt., Winnebago State Hosp., Winnebago.
Pippin, Leo M., Capt., 400 Superior St., Boscobel.
Stadel, Ernest V., Capt., 527 Vine St., Reedsburg.
Wilkinson, Philip M., Major, 114 E. Wisconsin, Oconomowoc.

Alaska

Dahl, Lewis K., Capt., Skagway.
Fritz, Milo H., Major, Box 1929, Ketchikan.
Mundt, Raymond, Major, U. S. Indian Hospital, Juneau.

ORGANIZATION SECTION

ANNUAL CONFERENCE OF SECRETARIES AND EDITORS OF CONSTITUENT STATE MEDICAL SOCIETIES

Dr Lyman W. Mason, editor of the *Rocky Mountain Medical Journal,* Presiding

(Concluded from page 719)

Friday, February 8

EDITORIAL CONFERENCE

After an opening address by Dr George F Lull, Associate General Manager of the American Medical Association, Dr Mason presented a statement urging leadership by editors of state medical journals He said, in part, "It seems to me that the chief function of the state and regional journals is the dissemination of *medical news and medical* knowledge and developing a coordinated front in solving our problems to the public and to legislative bodies Certainly there ought to be some attempt within the realm of the editor to shape general medical opinion These efforts should stem from some consensus which has been urged in meetings like these and from the leadership of the American Medical Association, the Board of Trustees and the House of Delegates"

Dr Mason then introduced Dr Henry A Davidson, editor of the *New Jersey State Medical Journal*, who conducted a clinic on editorial problems The problems discussed included consideration of a "Letters to the Editor' page, discussed by Dr Carl B Drake (Minnesota), Dr Robert N Nye (Massachusetts), Dr George Kosmak (New York), Dr Holman Taylor (Texas), Dr Herman M Jahr (Nebraska), Dr Wilfrid Haughey (Michigan), Dr Creighton Barker (Connecticut) and Dr P E Blackerby (Kentucky).

Next was the receipt of books for review, the publication of reviews and the disposal of the books This was discussed by Drs Wilfrid Haughey (Michigan), Everett M George (Iowa), Henry A Davidson (New Jersey), R B Anderson (Texas) and Wingate Johnson (North Carolina)

The preparation and publication of editorials were discussed by Drs Henry A Davidson (New Jersey), Holman Taylor (Texas), Robert N Nye (Massachusetts), Thomas Murdock (Connecticut), George Kosmak (New York), Walter Donaldson (Pennsylvania) and Creighton Barker (Connecticut)

The next subject discussed was the reporting of county society activities, in which Drs Henry A Davidson (New Jersey), Herman M Jahr (Nebraska), George Kosmak (New York), Holman Taylor (Texas), Stanley Weld (Connecticut), Stewart G Thompson (Florida) and Wingate Johnson (North Carolina) participated

The publication of the activities of the Woman s Auxiliary was considered in discussions by Drs Henry A Davidson (New Jersey), Robert N Nye (Massachusetts) and P. P Chase (Rhode Island) Incidental to this discussion was a consideration of the publication of poetry

The meeting concluded with a presentation of the regulations on advertising of the Cooperative Medical Advertising Bureau

Saturday, February 9

The session of February 9 opened with a consideration of public relations published in The Journal for February 23 page 509

Following this presentation the conference considered prepayment medical care plans "Progress Toward a National Medical Prepayment Plan" was presented by Jay Ketchum executive vice president of the Michigan Medical Service The subject was discussed by Drs A W Adson (Minnesota) Creighton Barker (Connecticut), Morris Fishbein (Chicago), Walter Donaldson (Pennsylvania), A J Bowles (Washington), Frank Borzell (Pennsylvania), C G Spivey (South Carolina) and Thomas Murdock (Connecticut)

Postwar Medical Service

MINUTES OF MEETING OF JANUARY 12

Chicago, Illinois

The Committee on Postwar Medical Service met in the Board of Trustees Room of the American Medical Association Building, 535 North Dearborn Street, Chicago, Saturday, January 12, and was called to order by the Chairman, Dr Ernest E Irons, at 10 15 a m Those present were

Dr Walter L Bierring
Mr Graham L Davis
Capt William E Eaton
Dr Morris Fishbein
Dr E L Henderson
Mr J W Holloway Jr.
Dr Ernest E Irons
Dr Victor Johnson
Dr B R Kirklin
Major Gen George F Lull
Dr J J Moore
Col William N Piper
Father A M Schwitalla S J
Dr R L Sensenich
Dr H H Shoulders
Dr Austin E Smith
Lieut Col John K Voegtly
Col Floyd L Wergeland
Dr Olin West

Educational Internship and Residency Opportunities—Dr Johnson reported that the card reporting system inaugurated by the office of the Council on Medical Education and Hospitals was proving to be very helpful, that thirty to fifty returning medical officers come into the office every week and from one to two hundred written inquiries are received from such officers and answered each week Dr Johnson believed that at the present rapid rate of discharge it will be difficult to provide residencies in special fields for all desiring them and also that it appears to be doubtful that all those requesting certain residencies are qualified He thought that there would be about fifteen thousand who would want residencies of some sort. Dr Johnson stated that discussions had been carried on with the Advisory Board for Medical Specialties and a program worked out whereby the Council would approve certain residencies on a temporary basis and thus avoid the six to eight months delay that would be caused if approval procedures were to go through the regular channels The plan has been approved by the Council on Medical Education and Hospitals and by the executive committee of the Advisory Board for Medical Specialties but still awaits the approval of the individual specialty boards

With respect to the maintenance of residency quotas in the individual hospitals, Dr Johnson informed the Committee that the Procurement and Assignment Service had recently repeated its assertion that veterans would not be counted in the quotas at any time and that it will be announced soon that all quotas will be dispensed with about April 1 so that there will be no interference with the placement of veterans

Dr Johnson further stated that the deceleration of medical school programs is now possible as far as the Navy and Selective Service are concerned The Army has been urged to discontinue the Army Student Training Program and that will be done, in fact, a new directive has been issued which announces definitely the discontinuance of the program on June 30, 1946 Junior, sophomore and freshman students now in the medical schools under the A S T P will be demobilized on March 30, after which all schools can decelerate

Following Dr Johnson's statement there was discussion concerning approval of the temporary residency plan by the individual specialty boards, and Dr Kirklin said he had no doubt that the boards would approve it but that the plan should not be continued any longer than the emergency exists The Chairman agreed with Dr Kirklin, stating that the basic training demanded by the specialty boards is for the protection of the candidate and not of the boards and that while he was much in favor of the temporary approval plan he thought it should be emphasized officially that it is only an emergency measure Dr Kirklin pointed out that the candidates, under the temporary approval plan, still would have to take the examinations The Chairman stated that a further report on the situation would be expected at the next meeting

Enrolment of Medical Students.—Dr. Johnson, Chairman of the Subcommittee on Enrolment of Medical Students, reported that studies which have been made indicate that there is an entirely inadequate supply of students for 1946 classes; that data concerning this had been presented to the Inter-Agency Committee, but little encouragement was received, and that it still appears that no adjustment will be made by Selective Service toward the deferment of premedical students.

The Chairman presented to the Committee a telegram which had been sent, pursuant to instructions given by the House of Delegates of the American Medical Association, to the President of the United States, the Secretary of War, the Secretary of the Navy and many other officials of the government urging the correction of the regulations of Selective Service which make no provision for the deferment of young men qualified for entrance into premedical education, as follows:

> The House of Delegates of the American Medical Association in official session adopted the following statement: "The American Medical Association in common with all other medical groups views with apprehension the effects of the present regulations of Selective Service which make no provision for the deferment of young men qualified for entrance into premedical education. The American Medical Association believes that continuation of this policy will inevitably result in a lessened production of doctors at a time when more rather than fewer will be urgently needed. At this time, when veterans' needs, increased demands of military establishments for more doctors, and the greatly intensified concern with national health exist, the present program of Selective Service reducing the supply of doctors is indefensible. We therefore urge that the Military Affairs Committee of the House of Representatives and of the Senate take immediate steps to correct this situation in the interests of the public health and welfare." The House of Delegates directed that a copy of the statement be forwarded to each member of the Committee on Military Affairs of the House of Representatives and of the Senate, to the President, the Secretary of War, the Secretary of Navy, the Director of Selective Service and the Director of the Office of War Mobilization and Reconversion.

Replies to the telegram were received from many of those to whom it had been sent, and some of the replies indicated that the writers were in complete agreement with the Association's contentions. However, a reply received from the Acting Secretary of War, Mr. Kenneth C. Royall, read by the Chairman, was as follows:

> On December 10 the American Medical Association, through you as its Secretary, dispatched identical telegrams to President Truman, to the Secretary of War and to the Director of Selective Service. The President referred the telegram addressed to him to the Secretary of War. The Director of Selective Service replied on December 14 to the telegram addressed to him. A copy of his reply has since been furnished to the Secretary of War, who concurs in the position therein taken.
>
> Secretary Patterson is appreciative of the most helpful assistance repeatedly rendered to the War Department by the American Medical Association, which has been of especial value during the war crisis. However, after personally considering the Association's telegram, he did not feel that it would be sound policy to permit preferential treatment of any special group of individuals as to exemption from Selective Service, as this would be discriminatory against other groups and would, of course, lead to increased demands for special exemptions.
>
> Further it is believed—and hoped—that, as stated in the letter of the Director of Selective Service, the present return of veterans will very largely remove the condition with which the Association is concerned.

Father Schwitalla thought it would be well to try to find out just how many G. I.s there now are in college who plan to go on to medical school and was informed by Dr. Johnson that Dr. Harold S. Diehl had attempted to do this and had compiled some figures from colleges which normally supply between 15 and 20 per cent of the freshman classes to the medical schools. Dr. Diehl's figures indicate that these colleges have about one fourth of their usual supply of all types of premedical students, including G. I.s, who form a very small proportion of the whole. Selective Service did not appear to be impressed with the significance of the survey, maintaining that it did not represent what will be the case later on in 1946. In response to a suggestion from Father Schwitalla, Dr. Johnson said the Council on Medical Education and Hospitals would attempt to make a more comprehensive survey and, if possible, report thereon at the next Committee meeting.

Surplus Medical and Hospital Supplies.—Father Schwitalla, Chairman of the Subcommittee on Surplus Medical and Hospital Supplies, made the following statement: A meeting was held on December 13 of the Advisory Committee of the Surplus Property Board. This was the first time such a meeting has been held, and it was well attended. Existing regulations were discussed, particularly Regulation number 14 pertaining to disposal of property to nonprofit institutions, implementing paragraph 13 of the basic law (Public Law 457). There was also discussion by the Advisory Committee of the second set of regulations, having to do with the designation of the disposal agency. The question of who holds title to the property after it is called surplus was cleared up by a definition that the title passes into the hands of the Reconstruction Finance Corporation. The Army gives up all title to it and the money that comes in goes to the R. F. C. Regulation number 1 takes care of that point. Regulation number 15 takes care of disposal of real estate and affects whole hospitals; bids are being made for hospitals by groups of physicians. A struggle has been going on within the Surplus Property Administration with reference to centralization of authority, inventories and information, which are all decentralized. There are now thirty-one disposal agencies each having a measure of responsibility, which apparently accounts for the fact that with reference to surplus property it is difficult to make any general statement that affects the whole country. A matter for consideration was to what extent the government should go into the reassembling of surplus material, a process that might be necessary because of the manner in which most of it is stored. The Advisory Committee also discussed the matter of procedure and devised a new system. Under the old method an application for medical or hospital supplies originated with an individual or an institution. From the individual or the institution it went to the U. S. Public Health Service, which passed on the application, and from the Public Health Service it went to the Surplus Property Administration and, after approval by that agency, to the R. F. C. Thus four steps were required before final action could be taken. The Advisory Committee thought there could be no good reason why the applications could not be handled by one office, and that idea was embodied in a resolution outlining a new and simplified procedure. It is unfortunate that the final decision has not yet been made known. The material now available is only a small percentage of the thirty billion dollars' worth of property that finally will be available for disposal as surplus.

In the discussion following Father Schwitalla's statement, Dr. Fishbein stated that those responsible for disposal were putting most of their effort at present on selling the larger items—whole hospitals or buildings at one time—and are interested right now only in the mass disposal of such items.

In reply to a question from Mr. Davis concerning the amount of surplus medical and hospital supplies and equipment that actually would be usable, Father Schwitalla stated that, between July 31, 1944 and July 31, 1945, $18,900,000 worth of professional and scientific apparatus was declared surplus—mostly to dealers—and that during the same period $12,200,000 worth of that amount was inventoried but was not in condition that it could be offered for sale. In the same period $8,100,000 worth of drugs and medicines was inventoried but has not been offered for sale. Dr. Fishbein remarked that surplus drugs and medicines must be standardized through the Food and Drug Administration before being offered for sale.

Captain Eaton, in describing the method of disposal by the Navy, doubted that there would be much surplus medical property available through the Navy Department. He said that much of it was overseas and very likely would be left there as not worth bringing back, and that the Navy probably would itself use most of its own surplus medical property.

The Chairman requested the Subcommittee to keep working on the matters with which it has been concerned and report again at later meetings.

Bureau of Information.—Dr. West reported that the Bureau of Information is going ahead with the accumulation of information and has recently taken on some work incident to the activities of the Committee on Rural Medical Service. He stated that there is great desire on the part of farm organizations to make contacts with state and county medical societies to work out some plan for medical service in rural areas, and that the representatives of the farm organizations are very intelligent and sincere people. It occurred to Dr. West that the Committee on Postwar Medical Service might become a part of the picture. He said that the records as they were being developed in the Bureau of Information for a while seemed to encourage the hope that a number of men—more than expected—would be willing to settle in rural areas, but the proportion as evidenced by more complete data is gradually dwindling.

The number of visits to the Bureau from returning medical officers has greatly decreased, but it is anticipated that it soon will increase again. The Bureau is trying to be as helpful as possible in every respect. The correspondence coming to the Bureau contains many complaints from men who feel they are being unduly kept in service with nothing to do, some insisting that they never have had anything to do. Some of the complaints appear to be justified, but there is nothing that the Bureau of Information can do about this, and Dr. West felt sure that the Surgeon Generals of the Army and Navy have done and are doing all they possibly can to clear up the very complicated situation. It is probable that the Bureau of Information will be continued after this emergency for the purposes of the American Medical Association itself to gather information and data which can be used to advantage.

Father Schwitalla discussed the matter of rural medical service, saying that the Catholic Rural Life Conference had accomplished a great deal in getting people settled in rural areas and back on the farms. He also said that on the question of medical service in rural areas the people ask why it is that they cannot get a physician when they promise funds "and everything"; that the funds are there and hospitals have been erected, and still not enough doctors will settle in some places.

Dr. West stated that his impressions were slowly crystallizing into an opinion that one of the chief reasons why physicians cannot be retained in strictly rural areas is the lack of social and cultural contacts of the kind they most desire. Another phase of the matter, he said, is that some physicians go into country practice under contract with the provision that they can do all the private practice they wish but have no time for private practice.

Father Schwitalla asserted that one complaint of the farm groups is that they do not get any cooperation from the local medical and hospital groups. Dr. West mentioned that several of the state medical societies having medical service plans are trying to extend their service into rural areas.

After further discussion it was moved, duly seconded and carried that a representative of the Committee on Rural Medical Service be made a member of the Committee on Postwar Medical Service. (On request of the Chairman, Dr. F. S. Crockett of Indiana, Chairman of the Committee on Rural Medical Service, has accepted membership.)

Dr. Bierring mentioned as an important feature of the hospital construction measure—the Hill-Burton—the fact that the disposition of funds is going to be dependent on a careful survey in each state by local people, who will determine the need and whether future maintenance will be assured.

The Chairman said he would ask for a further progress report at the next meeting.

Veterans Administration.—Father Schwitalla, Chairman of the Subcommittee to Confer and Cooperate with the Veterans Administration, reported that he and Dr. Johnson, with Mr. Russ Clark of the American Hospital Association, had had another satisfactory conference with representatives of the Veterans Administration. Dr. Johnson had drawn up a statement for publication in The Journal which the Subcommittee had hoped by this time would have received approval from the Veterans Administration so that it might be released to The Journal at once but, although Mr. Stirling in a phone conversation had indicated that approval would be forthcoming immediately, it had not yet been received, and the Subcommittee was not in position, until receipt of such approval, to make any recommendation to the Committee.

The Chair entertained a motion, which was adopted, authorizing publication of the Subcommittee's report as soon as it becomes available. (Note.—The report of the Subcommittee was published in The Journal, January 26, pp. 216-218.)

The Chairman presented a letter addressed to the Committee on Postwar Medical Service and signed by eleven Army medical officers on duty with the Veterans Administration. The letter was in the nature of a protest against the inclusion of osteopaths in the Veterans Administration bill, H. R. 4717.

A telegram presenting a similar protest from officers at Bay Pines, Fla., was presented, and the Committee was informed that that communication had been forwarded to the Administrator of Veterans' Affairs in Washington.

There was extended discussion concerning various problems of the veteran medical officers, including the matter of payment by hospitals to residents, the adequacy or inadequacy of the stipend allowed hospital residents under the G. I. bill and the lack of facilities in and increased expense to hospitals that are trying to provide more residencies than normally. In reply to a question by Dr. Kirklin, Dr. Johnson stated that there still was a distinct shortage of residencies and that the shortage probably would increase during the next few months.

It appeared to be the consensus that all residents in hospitals should receive the usual stipends, and that whatever could be accomplished in the way of increasing subsistence payments allowed under the educational provisions of the G. I. bill should be attempted.

The Chairman stated that the Subcommittee was authorized to proceed and announced the addition to its membership of Mr. J. W. Holloway Jr., Director of the Bureau of Legal Medicine and Legislation of the American Medical Association.

Licensure.—Dr. Bierring referred to action taken by the Executive Committee of the Federation of State Medical Boards recommending "That the federation reaffirm its disapproval of admitting to licensure returning medical officers who are graduates of unapproved medical schools, except in those states where special licensure provision is made for such graduates." Another action of the Executive Committee, to be submitted to the federation for final approval, was "That the federation recommend to the member state boards and the District of Columbia requiring medical licensure for hospital residents a reconsideration and clarification of the purposes of hospital residencies as an educational feature, this to apply particularly to returning medical officers. If considered as a part of postgraduate training, that the duties of such positions be clearly defined in order to permit exemption from medical licensure."

A motion was adopted to appoint a subcommittee whose duty it would be to look into the matter of licensure of residents and of the refusal in some areas of county medical societies to take into membership without a probation period of anywhere from one to three years those medical veterans who move into their communities, sometimes on the advice of the Procurement and Assignment Service, and try to set up a practice.

The Chairman appointed the following subcommittee to look into these questions and report: Dr. Morris Fishbein, Chairman; Dr. Victor Johnson; Mr. J. W. Holloway Jr.

Mr. Davis summarized the situation in Michigan with respect to the licensure of residents. He stated that the licensing law in Michigan was passed in 1898 and there is nothing in it about licensing residents; that resident licensure was purely a regulation of the state licensing board, and that the attorney general of the state seems to have been finally convinced that there is nothing in the Michigan law to support it. He thought Dr. Bierring might look into various state laws and thus learn that the requirement of a license from residents in most if not in all of the states requiring them has been done under regulations of the licensing boards rather than under the law itself. Mr. Holloway said that as long as regulations are not in conflict with the actual law they have the complete effect of law, and he questioned the authority of a state board to exempt from license a resident who may be going to engage in the practice of medicine.

After further discussion hinging on the question of the returning medical officer who takes up a residency as a means of refreshing his medical knowledge being forced to pay a resident license fee, the Chairman requested Dr. Bierring to follow up the problem and report at the next meeting.

Assistance to the Philippines.—The Chairman asked for comments from the Committee members and for ideas as to anything further that might be done in the matter of rendering aid to the medical profession in the Philippines, mentioning the report made by Dr. James E. Paullin at the December meeting of the Committee.

General Lull stated that a number of Philippine physicians are being sent to this country for training—about fifteen physicians from the Philippine army.

New Business.—The Chairman brought to the attention of the Committee several communications from medical officers still in service, both in the Army and in the Navy, complaining because of their prolonged and, to them, unnecessary retention in the armed forces. Captain Eaton said that the Navy officers still on duty outside the United States were beyond the jurisdiction of the Bureau of Medicine and Surgery, and the Surgeon General can do nothing about those now in the Pacific; that the men were being relieved just as fast as possible; that it is to be remembered that the Medical Corps of the Navy had expanded from a small number to a host, and that the number in the regular Medical Corps is absolutely inadequate to staff the Navy's own hospitals. Colonel Piper informed the Committee that, on Jan. 3, 1946, 20,483 medical officers had been discharged from the Army and 29,640 nurses from the Army Nurse Corps. General Lull stated that, in the European Theater of Operations, when a man is declared surplus he is sent to a port and as soon as he is at the port he is crossed off the ETO books, but nothing can be done for the men in the Pacific.

Actions of House of Delegates of American Medical Association.—It was reported by the Chairman that the report of the Committee on Postwar Medical Service presented to the House of Delegates of the American Medical Association at its meeting in December had received the approval and appreciation of the House, which expressed the hope that the Committee would be continued. He stated that the work of the Bureau of Information also had received commendation, and expression had been given to a hope that the Bureau might be continued and probably placed on a permanent basis.

The Chairman further informed the Committee that the House of Delegates had authorized the appointment of a Committee on Military Medical Service whose purpose it would be to look into the question of how military medical service might be aided in the postwar period and in the event of hostilities in coming years, and to evaluate military medical activities in the war just ended with the hope of creating an acceptable plan for the setting up of a military medical establishment in future emergencies which would avoid mistakes made in the recent past. He said that the new committee would be appointed by the Board of Trustees in February and the Committee on Postwar Medical Service would be informed.

Remarks of Liaison Members.—Father Schwitalla brought up the question of the future scope of the Committee on Postwar Medical Service, saying that if it turns out to be a committee of the postwar period not necessarily having a tie up with the war, other matters of immediate and important interest to the profession could be considered; that the Committee as now constituted with representatives of so many important medical organizations could become a valuable medium for the interchange of opinion among the various organizations represented, and that future objectives merited further definition.

The Chairman stated that the Committee had considerable unfinished business with which it could well deal, and that a little later the desirability of extending or changing its scope along the lines suggested by Father Schwitalla might be considered and recommendations made to the groups represented on the Committee. He said that it might be desirable to have a number of organizations sitting around one table considering the problems of American medicine, as had been the case during the existence of the Committee on Postwar Medical Service.

Colonel Wergeland discussed the Army's refresher program for returning veterans, stating that authority has now been received from the War Department providing for three months refresher courses, which will take some of the load off veterans' hospitals. He pointed out that medical officers cannot be recalled from terminal leave for this purpose. They may now sign up for three months work in any hospital.

Time and Place of Next Meeting.—It was decided to hold the next meeting of the Committee at American Medical Association Headquarters, Chicago, March 9, 1946.

Medical Legislation

MEDICAL BILLS IN CONGRESS

National Mental Health Act

H. R. 4512 passed the House, March 15, proposing to amend the Public Health Service Act to provide for research relating to psychiatric disorders and to aid in the development of more effective methods of prevention, diagnosis and treatment of such disorders. This bill would make available to the Public Health Service annually the sum of $10,000,000 to carry out its purposes and an additional appropriation of $4,500,000 to construct a National Institute of Mental Health in or near the District of Columbia.

Hill-Burton Hospital Construction Bill

The Public Health Subcommittee of the House Committee on Interstate and Foreign Commerce has concluded hearings on S. 191, the Hill-Burton hospital construction bill. Representatives of the Association appeared before the subcommittee on March 8 in support of the general objectives of the bill. Congressman Priest, chairman of the subcommittee, has indicated that committee action on the bill will be expedited as much as possible.

Army Chiropody Corps

Congressman Traynor, Delaware, has introduced H. R. 5761, a bill to establish a Chiropody Corps in the Medical Department of the Army, to consist of sixty commissioned officers in grades from colonel to second lieutenant inclusive. The bill is pending in the House Committee on Military Affairs, of which Congressman May, Kentucky, is chairman.

Veterans Administration

H. R. 5638, introduced by Representative Havenner, California, proposes to authorize an appropriation of $900,000 to construct a 150 bed patient capacity addition to the existing Veterans Administration facility, Fort Miley, California, for the treatment of general medical and surgical disabilities.

H. R. 5574 has been favorably reported by the House Committee on World War Veterans' Legislation, proposing to increase from $500,000 to $1,500,000 the revolving fund available for loans to disabled veterans pursuing vocational rehabilitation.

STATE LEGISLATION

California

Bill Enacted.—A. 61-X has become chapter 87 of the Laws of 1946. It provides an appropriation of $4,000,000 to the regents of the University of California for the purpose of additional construction, improvements and equipment for the Medical Center of the University of California at San Francisco.

Kentucky

Bills Introduced.—H. 300, to amend the law relating to pharmacies and drugs, proposes to make it unlawful to sell at retail any drug which contains any quantity of aminopyrine, barbituric acid, cinchophen, dinitrophenol, pituitary, sulfanilamide, thallium acetate, thyroid, or their derivatives, or a drug or device the label of which bears a statement that it is to be dispensed or sold only by or on the prescription of a physician, dentist or veterinarian, unless such drug is sold on a written prescription signed by a member of the medical, dental or veterinary profession who is licensed by law to administer such drug or device, and its label bears the name and place of business of the seller, the serial number and date of such prescription, and the name of such member of the medical, dental or veterinary profession. S. 251, relating to licenses to practice certain professions, proposes that any person serving in the armed forces who, at the time of entering such service, was licensed to practice a profession in any other state by the proper authority of such state and who, at the time of entering the service, would have been entitled to receive without examination a license to practice such profession in Kentucky under any statute of Kentucky authorizing the issuance of reciprocal licenses, shall, on making application within one year after being separated from the service, be entitled to receive without an examination a license to practice such profession in Kentucky, notwithstanding that since the time of entering such service the state in which he was licensed to practice has ceased to issue licenses to practice such profession on a reciprocal basis. S. 252, relating to medical scholarships, proposes to authorize the state board of health to establish annual medical scholarships of the annual value of $800 each. The proposal would require an applicant to sign a written contract under the terms of which he agrees to pursue the medical course of an accredited medical college located within Kentucky until his graduation and to complete a term of not exceeding two years as an intern at some approved hospital to engage continuously in the general practice of medicine in a rural community in Kentucky selected by the state board of health for a period of years equal in number to the years that he shall be a beneficiary of such scholarship.

Bills Passed.—H. 171 passed the house March 6. It proposes the enactment of a law authorizing the establishment, maintenance and operation of medical service plan corporations. "Medical services" would mean the "general and usual services rendered and care administered by doctors of medicine." "Participating physician" would mean a "doctor of medicine licensed to practice medicine and surgery in this state under the provisions of the medical practice act" who agrees in writing to perform the services specified by the subscription certificates. S. 87 passed the senate March 14. It proposes that no person after July 1, 1946 shall maintain a hospital in the state without first obtaining a license therefor. The word hospital is defined as "any institution which maintains and operates organized facilities for the diagnosis, treatment and care of human beings suffering from illness, injury or deformity, where bedside nursing care is rendered for a period exceeding twenty-four hours, to care for 10 patients or more." S. 109 passed the house March 12. To amend the law relating to the practice of chiropractic, it increases the required period of academic training and adds philosophy to the list of subjects which must be studied.

Bills Enacted.—H. 257 was approved March 6, 1946. To amend the law relating to divorce, it authorizes the granting of a divorce when one spouse has become permanently and incurably insane and has been confined in an asylum for at least five years prior to filing the suit. In such action the court shall find from the testimony of two or more physicians competent in psychiatry that such insanity is permanently incurable.

Massachusetts

Bills Introduced.—S. 426 proposes to authorize the department of public health to construct an 800 bed hospital for the care of persons suffering from chronic diseases. S. 427 proposes to authorize the department of public health to continue its program for the production and utilization of blood plasma and other products derived from blood.

Bill Passed.—H. 74 passed the senate March 12. To amend the law relating to bacteriologic laboratories, it proposes to authorize the department of public health to grant certificates of approval for laboratory tests on milk, foods, eating utensils, water and sewage in accordance with such rules and regulations as the department may establish.

Mississippi

Bill Introduced.—H. 745, to amend the law relating to divorce, proposes to authorize the granting of a divorce on the grounds of insanity after a thorough examination of such insane person by three physicians who are recognized authorities on mental diseases and who agree that such insane person is incurable.

Bills Passed.—H. 782 passed the house March 13. It proposes that any person who has been in any branch of the armed forces of the United States, who has a license to practice any profession in Mississippi and who is required by law to pay dues to any licensing board or association shall be exempt from the payment of such dues for the time while he is in the service of his country and shall be reinstated as a member in good standing without payment of any back dues. S. 155 passed the senate March 12. To amend the law relating to the licensing of nurses, it proposes certain standards which a hospital must maintain in order to be recognized and approved as a training school for nurses.

Missouri

Bill Introduced.—S. 456 proposes the creation of a division of the state department of education to be known as the division of registration and examination and assigns as boards of said division the state board of medical examiners, state board of osteopathic registration and examination, state board of chiropractic examiners and others.

Bills Passed.—S. 359 passed the senate March 5. It proposes the establishment within the department of education of a division of registration and examination to coordinate the work of existing boards of registration and examination, including the state board of medical examiners, the state board of chiropractic examiners and the state board of osteopathic registration and examination. S. 424 passed the senate March 12. It proposes to transfer to the state board of medical examiners certain powers and duties heretofore vested in the state board of health. S. 435 passed the senate March 5. It proposes to transfer to the executive secretary of the division of registration and examination of the state department of education certain powers heretofore vested in the state board of chiropractic.

New Jersey

Bill Introduced.—A. 418, to amend the workmen's compensation act, proposes to provide proper workmen's compensation in cases of hernia.

Bills Passed.—A. 69 passed the senate March 11. It proposes to authorize the establishment and maintenance of blood banks to collect, process, store and distribute human blood and the various human blood derivatives, including special therapeutic and diagnostic serums which are deemed of value in the treatment of sick and injured persons, and the prevention of certain diseases. A. 147 passed the assembly March 12. It proposes that the holder of a license to practice a profession the license or registration certificate of which was forfeited or lapsed because of the passage of time while the holder thereof was in the armed forces shall be entitled, without examination or reexamination, within six months after his discharge, to a renewal or reinstatement of such license on payment of the lawful fee.

New York

Bills Introduced.—A. 2087 is similar to S. 1572 previously reported. It proposes the creation of a board of massage examiners and defines massage as "treating the human body for hygienic or remedial purposes by stroking, kneading, tapping or rolling with the hands or with other instrumentalities for the purpose of relieving, alleviating or reducing affected parts thereof but shall not include reduction of a fracture or dislocation of a bone." A. 2104 proposes the creation of a state board of chiropractic examiners and defines the practice of chiropractic as "the science of locating and the removing of nerve interference in the human body, according to chiropractic principles, where such interference is indicated; or misalinement; or subluxations of the vertebral column appear. It excludes operative surgery, the reduction of fractures, the prescription or use of drugs or medicine, and the practice of obstetrics." A. 2121 is similar to S. 1626, previously reported. It proposes the creation of a board of nutrition control at least one member of which shall be a licensed doctor of medicine, to adopt and specify standards of quantity, quality and character of food to be fed to all wards, inmates and patients in all institutions of the state except those in the department of education. A. 2165 is similar to S. 1797, previously reported. It proposes that physician members of the industrial council shall not be eligible for authorization to render medical care under this chapter and shall not examine, treat, consult or in any other way care for a compensation claimant at the request either of such claimant or of a carrier. A. 2206 is similar to S. 1904, previously reported. It proposes the creation of a temporary state commission to make an intensive study and survey of social, educational and physical problems of individuals afflicted with cerebral palsy with the view and for the purpose of devising and recommending a program for the aid, care, treatment and rehabilitation of such persons. The proposal would require at least two members of the commission to be physicians or neurologists of conceded eminence, with especial knowledge of the causes and effects of cerebral palsy and the treatment and care of persons suffering therefrom. A. 2366, to amend the public health law, proposes to make it the duty of every householder, before employing any person for domestic service in his household, to require from such person the production and surrender of a certificate of good health from a duly licensed and registered physician, issued not more than thirty days prior to the date of application or commencement of such employment, certifying that such person is free from tuberculosis, any venereal disease in its communicable or infectious stage or any other infectious, contagious or communicable disease. The employee would be required to be reexamined each six months. A. 2377 proposes to authorize corporations organized under the consumers' cooperative stock corporation law for the purpose of furnishing medical expense indemnity service to persons who become subscribers under contracts with such corporations to reincorporate under the membership corporations law. A. 2395, relating to the creation of a nutrition council, proposes the creation of a state nutrition council to coordinate all of the state's nutritional activities, conduct research or allocate a portion of its funds for research in nutrition; recommend reorganization of the state's nutritional activities; launch a widescale advertising, publicity and promotional campaign of instruction of the elements constituting a sound diet and the proper use of such farm products as may become surplus from time to time; and to do such other things as the council may deem essential for improving the nutritional status of the people. S. 1857 is similar to A. 2140, previously reported. It proposes to authorize qualified dentists or qualified dental assistants to use general anesthetics in the care and treatment of dental patients but would require such persons to have at their disposal at the time of administering any general anesthesia the necessary drugs, medicines and equipment for resuscitation as the board of dental examiners shall prescribe. The qualified dentist or dental assistant is defined as one who has passed an approved course of training or who has approved experience in the administering of anesthetics. S. 1955 is similar to A. 2157, previously reported. To amend the workmen's compensation law, it proposes that medical services shall include roentgenology, physical therapy, pathology and anesthesiology. S. 2038, to amend the labor law, proposes the enactment of a disability benefit law. S. 2218 proposes an appropriation for the use of the memorial cancer center fund for cancer research and for the treatment, prevention and cure of cancer and allied diseases. S. 2238, to amend the insurance law, proposes to remove therefrom the general prohibition against authorizing foreign or alien medical expense indemnity or hospital service corporations from doing business in the state. S. 2260 proposes the creation of a temporary state commission to make a study and survey of the prevalence and facilities for the treatment of cancer cases within the state. S. 2292, to amend the education law, proposes a new section dealing with license by endorsement. The proposal would authorize the endorsement of the diploma and license of a physician from another state, and the issuance of a reciprocal license to practice medicine and surgery in New York to such physician, if he shows that he is a citizen of the United States, is not less than 35 years of age, has a degree of doctor of medicine from a class A school in the United States, Canada or foreign medical school, has secured a license to practice medicine and surgery from any state in the United States after written examination, has honorably served not less than three years as a permanently or temporarily commissioned officer in the medical corps of the United States Army or Navy during World War I or II and has obtained both the diploma and license to be endorsed at least one year prior to entry into the armed forces as a permanently or temporarily commissioned medical officer.

Bills Passed.—A. 1249 passed the assembly March 11 and the senate March 13. To amend the law relating to the practice of osteopathy, it proposes that persons holding a license to practice osteopathy who have been granted the additional rights provided for under existing statutes and persons who shall meet all the preliminary and professional requirements required as of Sept. 1, 1936 and have satisfactorily passed or shall satisfactorily pass the regular medical licensing examination shall be granted the right to practice medicine without limitation as defined by the statutes of the state of New York. S. 556 passed the assembly March 12. To amend the law in relation to hospital liens, it proposes that such liens shall not include personal services rendered by a physician or surgeon and that the rates charged by the hospital shall be deemed equivalent to the scheduled rates currently approved by the industrial commissioner and the superintendent of insurance for cases under the workmen's compensation law. S. 1000 passed the senate March 11. To amend the law relating to privileged communications, it proposes the waiver of such privilege by any party in interest in any litigation wherein the interests of the personal representative of the deceased patient are deemed by the trial judge to be adverse to those of the estate.

Rhode Island

Bills Introduced.—H. 771 proposes an appropriation to the state department of health to carry on an experimental dental research study in administrative practice in conjunction with the United States Public Health Service. H. 789 proposes to authorize any person arrested by the police of any city or town in the state or by a member of the state police to have the right immediately after his arrest to use a telephone in order to get in touch with his physician, his attorney or a member of his family. H. 828 proposes that no person, firm or corporation shall dispense benzedrine except on receipt of an original nonrefillable prescription therefor. S. 141 proposes to authorize the governor to appoint a special blood plasma bank commission to study the feasibility of establishing blood plasma banks in the several counties of the state, free for all who need it in the judgment of their doctors.

Virginia

Bills Passed.—H. 257 passed the senate March 9. It proposes that any person who has tuberculosis in a communicable form who, having been instructed in writing by the local board of health, department of health or health officer or superintendent of any sanatorium of the state to take precautions to protect the members of his household and the public from being infected by tuberculosis communicated by such person, wilfully refuses to follow such instructions shall be guilty of a misdemeanor. H. 378 passed the senate March 6. It proposes regulations for the creation of local hospital or health center commissions. S. 21 passed the house March 9. It proposes that the state board of health be authorized to initiate and administer a program of hospital treatment and care for indigent persons residing in the state. S. 237 passed the house March 7. It proposes the creation of an examining board for the certification of clinical psychologists.

Bills Enacted.—S. J. R. 20 was adopted March 6. It provides for the creation of a commission to make a thorough and complete study of problems related to hospital and medical care, including the need of hospitals and health centers in the state, adequate plans for the prepayment of hospital and medical care for all classes of citizens, with due emphasis on the special needs of rural people, and other items related to the health and medical care of the citizens of the state. S. 166 has become chapter 119 of the Laws of 1946. It amends the law relating to hypnotic drugs by redefining the words "dangerous drugs" so as to include, in addition to preparations already so included, "Hormones, or hormone drug preparations, whether of natural origin, prepared from the so-called glands of internal secretion or endocrine glands, or whether synthetically produced, by whatsoever trade name or designation, or any compound or mixture thereof; except preparations intended for external use containing hormones in combination with other ingredients unfit for internal administration." Under this law no person will be able to sell or give away any such drug except on the prescription of a doctor of medicine, doctor of osteopathy, doctor of dental surgery or doctor of veterinary surgery, lawfully practicing his profession, and prescriptions for hormones can be refilled only the number of times specified on the face of the prescription by the prescriber.

Washington Letter

(From a Special Correspondent)

March 18, 1946.

Delay of Truman Health and Medical Care Program

Congress has not yet acted finally on President Truman's proposed health and medical care program and many other projects which he stated were must legislation. Most of his legislative recommendations, some almost a year old, are in the Congressional mill, but few have emerged as law. His request for fair employment practices legislation was shelved, his labor and employment bills were scaled down The only administration items to go through pretty much as asked were surplus disposal measures Hearings have been under way on extension of price control and war powers and the British loan. Still awaiting final action are the health and medical care program, extension of the Selective Service act beyond May 15, the increased legal minimum wage, a comprehensive program for scientific research, the universal training program, the Presidential succession, the use and control of atomic energy, strategic materials stockpiling and social security coverage for veterans during military service.

Negro Doctors to Serve in Veterans' Hospitals

Dr. Paul R. Hawley, Veterans Administration medical director, reports that the way has been cleared for appointment of Negro doctors in veterans' hospitals, with local custom to be the ruling factor in appointments. He is considering plans to set up all Negro units in a number of hospitals with Negro patients to be attended by Negro doctors and nurses. Dr. Hawley reports that 152 full time resident physicians are now on duty in eight veterans' hospitals. The House Military Affairs Committee has voted favorably on a bill to permit retired officers to work as physicians, executives and hospital managers for the Veterans Administration without affecting their retired status.

President Given Control of Atom by Senate Group

The Senate Atom Energy Committee has voted to give the President direct control over production of atom bombs and other military applications of nuclear energy. Under the pending control bill a five man civilian commission would be authorized to produce atom weapons on "express consent and direction of the President." Mr Truman told a recent press conference that he was determined that atomic energy control should remain in civilian hands. He denied that military control of nuclear development was needed for national defense, declaring that as Commander in Chief he was charged with responsibility for the security of the nation.

Senate Action Expected on Mental Health Bill

Senator Claud Pepper, Democrat of Florida, expects early Senate action on the bill to establish a mental health institute in Washington, which was approved by the House by a standing vote of 74 to 10. Sponsored by Representative Priest, Democrat of Tennessee, who was supported by Representative Brown, Republican of Ohio, in piloting the bill through the House, the bill would appropriate $4,500,000 for a psychiatric research institute at Bethesda and would authorize $10,000,000 annually for research seeking cures for mental disorders

Nurses' Memorials Wanted Outside Washington

In addition to the $2,000,000 home for nurses planned for Washington as a national memorial to their work in the war, memorials in other cities have been requested. Arthur H. Johnson, chairman of a committee planning to raise funds for the Washington memorial, said that dwelling places for nurses are desired in other sections of the country "Once the main objective, a social center and dwelling place for war nurses in the nation's capital, is reached, we will decide on location of other centers"

Amputees Ask Government to Supply Automobiles

Three hundred war amputees met at Forest Glen Hospital to endorse a letter to President Truman asking that the government provide them each with a car in an attempt to remove their handicap in industrial competition

Official Notes

PIONEER TELEVISION PROGRAMS BY A. M. A.

The Bureau of Health Education announces a series of experimental telecasts over television station W9XBK, Chicago, beginning April 2 and running for twenty-six weeks

The following subjects will be shown:

April 2 —Evolution of the stethoscope. Dr Edwin P Jordan.
April 11.—Medical uses of the x rays Mr H A. Carter
April 25 —The basal metabolic rate Dr. William W Bolton
May 9 —Blood examinations Dr J J. Moore.
May 23 —Blood pressure demonstration Dr. William W. Bolton
June 6 —Contagious disease precautions in the home Dr W. W. Bauer.
June 20 —Methods of administering drugs Dr Austin E Smith

The programs are being telecast on a sustaining basis; that is, the station will derive no revenue. Credit will be given on the program to Chicago medical supply firms which lend apparatus for demonstration, but there will be no other advertising. Scripts will be prepared in cooperation with each medical demonstrator and coordinated by the Bureau of Health Education Dr. W. W. Bauer will summarize the odd numbered programs and Dr. William W. Bolton the even numbered programs.

Coming Medical Meetings

Aero Medical Association, Chicago, April 7 9. Dr. David S. Brachman, 1016 Dime Building, Detroit 26, Secretary.

Alabama, Medical Association of the State of, Birmingham, April 16 18. Dr. Douglas L Cannon, 519 Dexter Ave, Montgomery 4, Secretary.

American Association of Anatomists, Cleveland, April 4 6 Dr. Eliot R. Clark, University of Pennsylvania School of Medicine, Philadelphia 4, Secretary

American College of Physicians, Philadelphia, May 13 17. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Executive Secretary.

American Pediatric Society, Skytop, Pa, May 1 3 Dr. Hugh McCulloch, 325 N. Euclid Ave, St Louis 8, Secretary.

American Society for Research in Psychosomatic Problems, New York, May 11 12. Dr. Edwin G Zabriskie, 714 Madison Ave, New York 21, Secretary.

American Surgical Association, Hot Springs, Va, April 2 4 Dr. Warfield M Firor, Johns Hopkins Hospital, Baltimore 5, Secretary.

Arizona State Medical Association, Phoenix, May 2 3. Dr. Frank J. Milloy, 112 N. Central Ave., Phoenix, Secretary.

Arkansas Medical Society, Little Rock, April 14 15. Dr. W. R. Brooksher, 602 Garrison Ave, Fort Smith, Secretary.

California Medical Association, Los Angeles, May 7 10. Dr. George H. Kress, 450 Sutter St, San Francisco 8, Secretary.

Central States Dermatological Society, Detroit, April 27. Dr. Clarence E Reyner, Henry Ford Hospital, Detroit, Secretary.

Connecticut State Medical Society, Hartford, May 1 3. Dr. Creighton Barker, 258 Church St, New Haven 10, Secretary

Florida Medical Association, Jacksonville, April 22 24 Dr. Robert B McIver, P. O. Box 1018, Jacksonville, Secretary.

Georgia, Medical Association of, Macon, May 7 10. Dr. Edgar D. Shanks, 478 Peachtree St, N E, Atlanta, Secretary.

Illinois State Medical Society, Chicago, May 14 16. Dr. Harold M. Camp, 224 S. Main St, Monmouth, Secretary.

Iowa State Medical Society, Des Moines, April 17 19. Dr. John C. Parsons, 406 Sixth Ave, Des Moines 9, Secretary

Kansas Medical Society, Wichita, April 22 25 Dr F. R. Croson, 112 W. Sixth St, Topeka, Secretary

Louisiana State Medical Society, Alexandria, May 6 8 Dr P. T. Talbot, 1430 Tulane Ave, New Orleans 13, Secretary

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 23 24. Dr W. Houston Toulson, 1211 Cathedral St, Baltimore 29, Secretary.

Mississippi State Medical Association, Jackson, May 14 15 Dr T M. Dye, Box 295, Clarksdale, Secretary.

Missouri State Medical Association St Louis, March 24 26 Dr Ralph L Thompson, 634 N Grand Blvd, St Louis 3, Secretary

Nebraska State Medical Association, Lincoln, May 6 9 Dr R B Adams, 416 Federal Securities Bldg, Lincoln 8, Secretary.

New Hampshire Medical Society, Manchester, May 14 Dr C R. Metcalf, 5 S State St, Concord, Secretary

New Orleans Graduate Medical Assembly, New Orleans, April 1 4. Dr Joseph S D'Antoni, 1430 Tulane Ave, New Orleans 13, Secretary.

New York, Medical Society of the State of, New York, April 29 May 3. Dr Walter P. Anderton, 292 Madison Ave, New York 17, Secretary.

North Carolina, Medical Society of the State of, Pinehurst, May 1 3 Dr Roscoe D McMillan, P O Box 232, Red Springs, Secretary.

Northern Tri State Medical Association, South Bend, Ind, April 9 Dr John L Stifel, 232 Michigan St, Toledo 2, Secretary.

Ohio State Medical Association, Columbus, May 7 9 Mr. Charles S. Nelson, 79 E State St, Columbus Executive Secretary

Postgraduate Institute of the Philadelphia County Medical Society, Philadelphia, April 9 12 Dr George P. Muller, 301 S 21st St, Philadelphia, Director

Rhode Island Medical Society, Providence, May 15 16 Dr. William P. Buffum, 122 Waterman St, Providence 6, Secretary

South Carolina Medical Association, Greenville, April 30 May 2. Dr Julian P. Price, 105 W Cheves St, Florence, Secretary

Tennessee State Medical Association, Knoxville, April 9 11. Dr. W. M. Hardy, 706 Church Street, Nashville, Secretary

Texas, State Medical Association of, Galveston, May 6 9. Dr. Holman Taylor, 1404 W El Paso St, Fort Worth 3, Secretary.

West Virginia Medical Association, Huntington, May 13 15 Mr Charles Lively, P O Box 1031, Charleston 24, Executive Secretary.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Personal.—Dr. Claude F. Dixon, Rochester, Minn., was made an honorary member of the Los Angeles Surgical Society, February 8, at which time he discussed "Anterior Resection for Carcinoma of the Lower Sigmoid."

Diamond Jubilee.—On January 31 the Los Angeles County Medical Association held a dinner commemorating its seventy-fifth anniversary. As a feature of the occasion the bulletin of the society, January 31, was devoted to a complete review of the society's history, beginning with the meeting in 1871 of seven physicians in the office of Drs. John S. Griffin and Joseph P. Widney to organize the society. The preliminary meeting had been held on January 25. Dr. Widney is credited with being the founder of the School of Medicine of the University of Southern California, Los Angeles, of which he was first dean. The Diamond Jubilee issue of the bulletin contains interesting illustrations and discussions of the development of medicine in Los Angeles County.

COLORADO

Dr. Macomber Returns as Editor.—Dr. Douglas W. Macomber, Denver, has returned as editor of the Colorado State Medical Society. Dr. Lyman W. Mason, Denver, has been acting scientific editor while Dr. Macomber was serving in the army. Mr. Harvey T. Sethman has returned to his activities in the Colorado State Medical Society as executive secretary and managing editor of the *Rocky Mountain Medical Journal* (THE JOURNAL, Dec. 22, 1945, p. 1215).

CONNECTICUT

Conference on Pulmonary Diseases.—The Connecticut State Medical Society and the Veterans Administration are cooperating in the series of conferences the second of which was on pulmonary diseases, February 28. The speakers were:

Dr. James J. Hennessy, Hartford, Trends in Diagnosis and Treatment of Pulmonary Disease.
Dr. Joseph E. Dushane, Hartford, Pulmonary Disease in the Military Service.
Dr. Gustaf E. Lindskog, New Haven, Certain Aspects of Diagnosis and Treatment of Pulmonary Suppuration.
Capt. Morris Dressler, Newington, Pulmonary Disease with Relation to Heart Disease.
Dr. Joseph N. D'Esopo, New Haven, Thoracic Wounds in Battle Casualties.

Hospital Advisory Committee.—In anticipation of the passage of the Hill-Burton bill or similar federal legislation providing for studies of hospital and health center facilities in the states and grants to extend such facilities, Governor Raymond E. Baldwin has designated the state department of health as the official agency to act in this connection and named an advisory committee to the department to make the required studies. The committee, of which Dr. James R. Miller, Hartford, is chairman, is composed of twenty-six members representing health, hospital and nursing agencies, the state dental association and the Travelers Insurance Company. The committee held an organization meeting in Hartford on January 31.

Executive Director Named to Care for Inebriates.—With the appointment of Dudley P. Miller, Ph.D., as executive director of the Connecticut State Fund for Inebriates, a statewide system of free care for alcoholic addicts was launched January 25. Dr. Miller has been assistant director of New Haven Hospital and took over his new position March 15. The program will be financed by the fund to which will revert 9 per cent of all income from liquor license permits (THE JOURNAL, Dec. 1, 1945, p. 970). A board of trustees has been named for the fund, two physician members being Dr. Thomas P. Murdock, Meriden, formerly president of the Connecticut State Medical Society, and Dr. Arthur H. Jackson, Waterbury. Selden D. Bacon, Ph.D., of the department of sociology and the School of Alcohol Studies, Yale University, is chairman of the board. The program is said to be the first of its kind in the United States. It is planned to establish clinics in the major population areas and a number of convalescent centers for treatment of those who cannot be treated at home. The plans also call for a commitment center "to which courts and other constituted authorities may send for a period up to three years those inebriates for whom there is little or no hope of rehabilitation and who might otherwise be a liability and a danger to their communities." In a statement to the press, Dr. Bacon said the board would cooperate with the programs of Alcoholics Anonymous and the Yale school.

DISTRICT OF COLUMBIA

Group to Implement Compulsory Health Insurance.—*Medical Annals* reports that a group of physicians and laymen met at Pierce Hall January 26 "to set up a civic organization in Washington to carry on educational work for a national health program and to take any active legislative steps necessary to help implement that program, especially for compulsory health insurance." The group is further committed to support President Truman's national health program. Dr. Anna Tulman-Rand, chairman of the district chapter of the Physicians' Forum, called the conference and was elected chairman of the steering committee. Others who will serve on the committee are Dr. Irving W. Winik, Dr. Dorothy Boulding-Ferebee, Miss Margaret Stein, medical economist, Benjamin Asia of the district chapter of the National Lawyers' Guild and Rev. Francis W. McPeek of the Washington Federation of Churches.

ILLINOIS

Selective Service Personnel Honored.—The Congressional Medal of Merit was presented to 2,226 Cook County and Chicago members of the Illinois Selective Service system by Governor Dwight H. Green, January 23, at the Auditorium Theater, Chicago. The medal, authorized by Congress last July, was presented to local board members, appeal board members, government appeal agents, reemployment committeemen, physicians and dentists who have served the Selective Service System faithfully for a period of two or more years as of Nov. 30, 1945. In the case of a deceased member the medal was presented to a designated member of his family. Eligible members now serving in the military forces will receive their awards on release from service. Suitable ceremonies were held throughout the nation to honor Selective Service personnel in their respective states. In Illinois alone the honor group included at the time of this report 1,411 local board examining physicians, 388 physicians who were members of medical advisory boards, 18 physicians who were members of boards of appeal and 18 physicians who were members of local boards; 837 additional physicians who entered the armed forces while serving with the Illinois Selective Service System will receive the medal when they return to civilian life. Another group of 849 physicians have served or are serving the system but will not receive the medal by reason of their having resigned prior to the expiration of two years' service or by reason of having served less than two years.

Chicago

Solomon Memorial Foundation.—Dr. Joseph L. Wilkey was recently elected president of the Dr. Jerome D. Solomon Memorial Research Foundation, an affiliate of the Hektoen Institute of Medical Research, 629 South Wood Street, Chicago 12 (THE JOURNAL, Nov. 10, 1945, p. 756). The foundation research is sponsored by a medical advisory board consisting of Drs. Morris Fishbein, chairman, Ludvig Hektoen, Samuel J. Hoffman, Andrew C. Ivy, Raymond W. McNealy and Karl A. Meyer.

Loyola Will Not Close.—The current rumors that Loyola University School of Medicine intended to close are ended with announcement that the university is in the midst of discussions with the Medical Center Commission concerning space and position for the future Loyola medical school building. The medical school has been an integral part of Loyola University since 1915, when it came into being with the acquisition of Bennett Medical College, established in 1868, and the Chicago College of Medicine and Surgery. The medical school, which is approved by the Council on Medical Education and Hospitals of the American Medical Association, is located at 706 South Wolcott Avenue, the heart of the projected medical center area.

School for Handicapped Established.—The old North Chicago Hospital, 2551 North Clark Street, has been leased to house what will be known as the Illinois Children's Hospital School, a school for the handicapped, which was set up in recent legislation with an appropriation of $420,000 for the biennium ending June 30, 1947. Richard Eddy was appointed superintendent of the new project by Governor Dwight H. Green last October when he resigned as head of the Illinois State Training School for Boys, St. Charles. A medical program will be under the direction of Dr. Gerda B. Irving. Educational activities for children, who will range in age from 5 to 13 years, will be in charge of Miss Ruth A. Ryder, formerly educational and recreational supervisor in government hospitals in the Pacific War Theater. Miss Virginia Cornwell of Billings

Memorial Hospital was appointed director of occupational therapy. It is planned to open the school April 15 on an experimental basis, serving approximately 100 children of elementary age, to be taken from among those who are permanently handicapped, too crippled to attend regular school or who for various social reasons cannot study at home. The plan was evolved after a survey by the Illinois Commission for Handicapped Children, newspapers reported.

KENTUCKY

Personal.—Dr. Thomas P. Leonard has been named health officer of the city of Frankfort, a position he held prior to entering military service.——Dr. Philip H. Dorger was guest of honor at a dinner December 16 given in observance of his completion of twenty-five years as a member of the staff of the St. Elizabeth Hospital, Covington.

Girl Awarded First Scholarship Under New Fund.—Miss Juanita Phillips, Stearns High School teacher, is the first applicant to be accepted for a scholarship under the Kentucky Medical Scholarship Fund, newspapers report. Miss Phillips will receive a four year scholarship to the University of Louisville School of Medicine. The scholarship carries a loan of about $3,500 from the Kentucky Medical Scholarship Fund, set up by the Kentucky State Medical Association to provide medical facilities to make rural counties more attractive for practicing physicians and to enable students to complete their training. Miss Phillips, in accordance with the agreement, will, on receiving her M.D. degree and concluding her internship, return to McCreary County for four years for the practice of medicine. The scholarship fund was described in The Journal, January 19, page 162. The state legislature has been asked to set aside a revolving fund of $75,000 to help maintain the project.

LOUISIANA

Dr. Lapham Returns as Dean.—On January 1 Dr. Maxwell E. Lapham returned to his position as dean of Tulane University of Louisiana School of Medicine, New Orleans. Dr. Lapham had been in service with the navy.

Rudolph Matas Honored.—A gold plaque was presented to Dr. Rudolph Matas recently in honor of his completion of fifty years as a member of the staff of the Touro Infirmary, New Orleans. Dr. Matas, who is 85 years of age, graduated at Tulane University of Louisiana School of Medicine, New Orleans, in 1880.

Research Fund in Dermatology.— The Tulane University of Louisiana Medical School, New Orleans, has been left $100,000 by the late Dr. Henry E. Menage. The fund will be called the Henry E. and Henrietta Menage Research Fund in Dermatology and will be used for medical research on the causes, prevention and cure of diseases of the skin. Dr. Menage graduated at Tulane in 1892, receiving degrees in pharmacy and medicine. He joined the faculty in 1907 and later was made professor of dermatology. He was emeritus professor when he died in 1940.

MARYLAND

Alfred Blalock Declines Columbia Position.—Dr. Alfred Blalock, professor and head of the department of surgery, Johns Hopkins University School of Medicine, Baltimore, recently announced that he had declined an invitation to accept a similar position at Columbia University College of Physicians and Surgeons, and the Presbyterian Hospital, New York, it is reported.

MASSACHUSETTS

Tufts Alumni Meeting.—The annual dinner meeting of the Tufts Medical Alumni Association will be held at the Somerset Hotel, Boston, April 10, with Major Norman T. Kirk, Surgeon General of the Army, as guest speaker on "American Medicine in World War II." A message will be read from President Harry S. Truman. Other speakers will be Drs. Alonzo K. Paine, Reginald Fitz, Louis E. Phaneuf, Albert Warren Stearns, Dwight O'Hara, Benjamin Sachs, William E. Browne and Leonard Carmichael, LL.D., all of Boston. This year marks the fiftieth anniversary of the graduation in 1896 of the first class to complete the full program of studies as students of the Tufts College Medical School, Boston. A feature of the meeting will be the presentation to the medical school of a portrait of the seven founders of the medical school. The portrait is new and is a gift of the class of 1920. The subjects of the portrait are:

Dr. John W. Johnson, professor of obstetrics and gynecology.
Dr. Albert Nott, professor of physiology and dean.
Dr. Charles P. Thayer, professor of anatomy and secretary.
Dr. William R. Chipman, professor of surgery.
Dr. Henry W. Dudley, professor of pathology.
Dr. Frank G. Wheatley, professor of materia medica and therapeutics
Dr. Walter L. Hall, professor of medicine.

MICHIGAN

Inter-Professional Council.—Mr. William A. Freimuth of the Detroit Bar Association has been elected president of the newly organized Inter-Professional Council. The council was formed to develop a closer relationship between the professions and professional groups and to encourage friendly and constructive discussions between professions for mutual help and public service. Other officers are Dr. Willard D. Mayer, Wayne County Medical Society, vice president; Irett Ferris, Detroit Teachers Association, secretary, and Floyd Straith, Detroit District Dental Society, treasurer. Cooperating societies forming the membership of the new Inter-Professional Council include the Detroit Chapter of American Institute of Architects, Detroit Teachers Association, Detroit District Dental Society, Wayne County Medical Society, Michigan Association of Certified Public Accountants and the Engineering Society of Detroit.

Fund for Crippling Diseases.—On February 15 the council of the Wayne County Medical Society approved the program of the Fund for Crippling Diseases, a nonprofit organization devoted primarily to the study of rheumatic and allied diseases. The program is divided into three distinct sections: to raise funds by personal solicitation, to create an advisory research committee and to select and finance research projects. These three sections constitute the program to which this organization will devote its energies and funds. No further expansion of activities will be undertaken until such a time as the need for new activities is actually present and they are recommended by the local medical society and the American Rheumatism Association. All the solicitation for the raising of funds will be conducted by the present officers and trustees of the Fund for Crippling Diseases by personal contact. No solicitors will be employed and no fees or commissions will be paid. The advisory committee will be composed of nine members. At least six of the members will be medical doctors; the remainder will be Ph.D.s active in medical work. The board of trustees will dispense funds accumulated through solicitation, by gift or by grant to the projects recommended by the advisory committee in the amount and manner best suited to accomplish the results desired. All projects will be confined to local accredited schools and hospitals selected by the advisory committee. The new fund is a project developed from the proposed program of the Earl A. Peterman Foundation. In response to the request of Dr. Peterman, Detroit, for the society's approval, a special committee was appointed to study the plans. Since then the Earl A. Peterman Foundation has been incorporated under the name of the Fund for Crippling Diseases. Offices of the Fund for Crippling Diseases are Medical Director, 7600 John R Street, Detroit, and Research Division, General Offices, 19 Owen Avenue, Detroit. Dr. Earl A. Peterman is chairman of the board of trustees, Roy D. Potter, treasurer, and Joseph H. Conn is secretary. Plans call for a board of twelve trustees. Therefore nine more trustees will be elected to the board for three year terms; that is, three for one year, three for two years and three for three years and three year terms thereafter. The fund employs N. Chester Clark, 19 Owen Avenue, as full time business manager. The Earl A. Peterman Foundation identity is not being retained. The research advisory committee has not been formed as yet.

NEW YORK

Regional Hospital Council Formed.—The Council of Rochester Regional Hospitals has been established in a five year agreement with the Commonwealth Fund. Said to be the first of its kind in the country, the unit was established as an experimental plan to give rural hospitals the advantages of contact with the city medical center and opportunity to keep abreast of technics in use in city hospitals. Terms of a five year contract provide for an annual grant of $275,000 from the Commonwealth Fund, part of which will be used to establish an educational and consultative program for professional hospital personnel and part used for expansion of rural hospitals and purchase of additional hospital equipment if the need becomes apparent. Thomas R. White, president of the Rochester Hospital Council, was named president of the new council at an organization meeting February 26. The meeting climaxed almost a year's experimental program. The Rochester region was chosen by the Commonwealth Fund as the site of the experimental program after a study of a dozen or more areas possessing medical centers, such as that provided by Strong Memorial Hospital and the University of Rochester School of Medicine and Dentistry, it was stated. It is expected that other regional programs will be established on the lines of the one being set up in Rochester if the experiment proves successful. The council will name a director and will establish offices in the Reynolds Arcade Building. It will work in cooperation with the Rochester Hospital Council in developing the expanded program. A permanent program of educational activities will be set up by the council, including refresher courses and training in ward management and operating room and delivery room technic for graduate nurses and opportunities for exchange of experiences between hospital technicians, dietitians, medical record libraries and other staff members. A continuous postgraduate educational program for physicians will be organized which will embrace clinical conferences, short refresher courses and one to three year residencies and fellowships. An extensive clinical consultation service will be organized throughout the region. Cooperating hospitals, besides Rochester's six major hospitals and those in Canandaigua and Brockport, are Bath Memorial, Clifton Springs Sanitarium and Clinic, Dansville General, Bethesda and St. James Mercy in Hornell, Geneva General, and Soldiers and Sailors Memorial in Penn Yan.

New York City

Graduate Fortnight.—"Tumors" will be the theme of the nineteenth graduate fortnight of the New York Academy of Medicine, October 7-18.

Center for Persons Over Sixty-Five.—Representatives of social agencies and business groups of the East Side area are cooperating in the establishment of a recreational center for men and women more than 65 years of age. The objective of the center is to meet the problem of the aged by offering them an active environment with no intention of segregation.

Annie Goodrich Honored.—On February 26 a luncheon was held at the Waldorf Astoria Hotel to honor Annie W. Goodrich on her eightieth birthday. Miss Goodrich is credited with establishing the first graduate school of nursing at Yale University, New Haven, serving there as dean for eleven years as well as doing extensive pioneer work in the field of nursing.

The Menas Gregory Lecture.—Brig. Gen. William C. Menninger, director of the neuropsychiatric division of the Office of the Surgeon General, Army Service Forces, will deliver the second annual Menas S. Gregory Memorial Lecture at the New York University College of Medicine, April 26. His subject will be "Lessons from Military Psychiatry for Civilian Psychiatry."

Friday Afternoon Lectures.—The Medical Society of the County of Kings announces the following group of Friday afternoon lectures:

Dr. Irving J. Sands, Brooklyn, The Rehabilitation of the Neuropsychiatric Veterans, March 15.
Dr. Edwin K. Morgan, Brooklyn, Urologic Aids in General Practice, March 22.
Dr. John G. McNamara, Brooklyn, Orthopedics in Children, March 29.
Dr. Howard W. Potter, Brooklyn, Psychosomatic Medicine, April 5.
Dr. Henry W. Louria, Brooklyn, Practical Management of Diseases of the Thyroid Gland, April 12.

Colonel McEwen Returns as Dean.—Col. Currier McEwen, after more than two and a half years of military service, has resumed his duties as dean of the New York University College of Medicine. Granted a leave of absence by the university for military service, he entered active military duty May 6, 1943 and returned with the Bronze Star and the Legion of Merit. Col. McEwen first served as executive officer of the First General Hospital, which was the Bellevue affiliated unit. After training at Fort George G. Meade, Maryland, and Camp Pickett, Va., the unit sailed from Boston, Dec. 29, 1943, and opened as a functioning hospital at North Mymms Park, near London, Jan. 9, 1944, where for the first two months it experienced the Luftwaffe's "baby blitz" against London. In July 1945 Dr. McEwen joined the headquarters of the European Theater of Operations in Paris and Frankfort, Germany, as chief consultant in medicine.

Dr. Bernecker Resigns as Health Commissioner—Israel Weinstein Named.—Dr. Edward M. Bernecker on March 13 resigned as commissioner of health and was immediately reappointed to his former position as commissioner of hospitals. Lieut. Col. Israel Weinstein, newly appointed deputy commissioner of health, was appointed acting commissioner, pending the choice of a successor to Dr. Bernecker. At the same time the mayor accepted the resignation of William F. Jacobs, hospital commissioner, who took over that place on March 4, and approved his restoration to his former position of medical superintendent of Bellevue Hospital. Dr. David R. Rutstein, Albany, deputy commissioner of the New York City Department of Health since March 15, 1943, resigned, effective April 1. Dr. Rutstein has been in charge of social hygiene, child hygiene, nutrition and the Bureau of Tuberculosis. He was on the list of physicians recommended for the post of health commissioner to succeed Dr. Ernest L. Stebbins (THE JOURNAL, March 16, p. 727). On March 11 a resolution was adopted at a meeting of the committee on public health relations of the New York Academy of Medicine urging Mayor William F. O'Dwyer to rescind his recent action in the appointment of Dr. Edward M. Bernecker as health commissioner of New York City and to appoint as commissioner of health one who possesses the training and experience required by the city charter and who will maintain and extend high standards of public health in this city and, by example, throughout the nation. The resolution pointed out that the appointment of Dr. Bernecker is contrary to paragraph 551b of chapter 22 of the charter of the city of New York, which requires that the commissioner of health shall have had at least eight years' experience either in public health administration or teaching or both. These mandatory qualifications of the city charter are comparable to the training and experience required by the state of New York for health officers of all other cities in the state with a population of more than 50,000. In pointing out that Dr. Bernecker has not had the training or experience in public health administration or teaching required by the charter and therefore does not qualify under the law for the position of health commissioner of the city of New York, the academy has no intention of questioning his personal integrity or his qualifications as a hospital administrator. It wishes rather to indicate to the mayor that experience in hospital administration is in no way equivalent to that training or experience in modern public health practice which a health commissioner requires in arriving at important decisions daily which may affect the health of almost eight million people. The New York *Times*, March 13, reported that members of the board of health declared in a resolution that the appointment of Dr. Bernecker was contrary to the public interest and was "an unwarranted and unnecessary risk to the public safety." The *Times* carried a discussion of Mayor O'Dwyer's defense but indicated that he appeared upset at the actions of the board and the academy.

OHIO

Changes in Health Personnel.—Dr. Robert L. Thomas, Kinsman, was recently chosen health commissioner of Trumbull County, Dr. John A. Carter of the city of Middletown and Dr. Charles G. Goll, Stryker, of Williams County.——Dr. Nelson C. Dysart has resigned as health commissioner of Columbus.

Alpha Omega Alpha Lecture.—The annual address of the Alpha Omega Alpha Society of the University of Cincinnati College of Medicine was delivered by Dr. Herman J. Nimitz, Cincinnati, February 22. He spoke on "The Activities of the 25th General Hospital Unit in World War II." Dr. Nimitz was executive officer of this unit, which was composed of the medical and nursing staffs of the Cincinnati General Hospital and the medical school.

Harry Goldblatt Goes to California.—Dr. Harry Goldblatt has resigned as professor of experimental pathology and associate director of the Institute of Pathology at Western Reserve University School of Medicine, Cleveland, effective in August, to become director of an Institute for Medical Research being built for him at Cedars of Lebanon Hospital, Los Angeles. Dr. Goldblatt has been affiliated with the university since 1924. In 1932 he established the fact that high blood pressure can be caused by constriction of the renal artery, which reduces the blood supply to the kidneys.

Joint Committee on Tuberculosis Control Formed.—A joint committee on tuberculosis control has been organized in Ohio to develop a campaign for more adequate tuberculosis legislation in 1947. Dr. Carl A. Wilzbach, commissioner of health of Cincinnati, was appointed chairman of the committee. Seven state groups comprise the joint committee on a state level, and the campaign plans call for the formation of a similar committee in every county in the state within the next few months. The seven groups include the Ohio State Medical Association, the Ohio Conference of Tuberculosis Secretaries, the Ohio Public Health Association, the Ohio Federation of Public Health Officials, the Ohio Hospital Association, the Ohio Tuberculosis Hospital Association and the Ohio State Nurses Association.

TEXAS

Hospital Meeting.—The Texas Hospital Association is meeting at the Hotel Texas, Fort Worth, March 21-23. Holding concurrent sessions are representative groups of hospital administrators, medical record librarians, occupational therapists and woman's auxiliaries. The Texas Conference of the Catholic Hospital Association held a session March 20.

The Russ Endowment Fund.—Dr. and Mrs. Witten B. Russ, San Antonio, parents of the late Dr. Stirling Everett Russ, have given a $1,000 war bond to the Texas Memorial Library, the library of the State Medical Association of Texas, to establish the "Dr. Stirling E. Russ Endowment Fund." Only the interest from this fund, after the bond is matured and reinvested, will be expended in the development of the library, thus perpetuating the fund. Dr. Russ died at his home in San Antonio January 1.

Foundations Contribute to Medical College.—A section of the permanent building of the proposed Southwestern Medical College, to be built on Harry Hines Boulevard, will be known as the Braniff Research Laboratories, which was made possible through a recent $100,000 gift of the Braniff Foundation. The Braniff Foundation was established in 1943 for the purpose of advancing educational, charitable and religious institutions and to aid in the promotion of systems of scientific research. It is headed by Tom E. Braniff, president of Braniff Airways. The section provided by this fund will house the research work of Drs. Arthur Grollman, Warren B. Andrews, Tinsley R. Harrison and Simon Edward Sulkin, Ph.D., all of Dallas. The Hoblitzelle Foundation has given $125,000 to the Southwestern Medical Foundation to make possible the purchase of about 62 acres of land on Harry Hines Boulevard, on which the permanent buildings of Southwestern Medical College will be built. The land was given as a memorial to the late Mrs. Esther Thomas Hoblitzelle, wife of Karl Hoblitzelle, who founded the Hoblitzelle Foundation, which had its inception as a public welfare institution in December 1942. Serving with Umphrey Lee, Ph.D., Dallas, as trustees of the foundation are Judge Sara T. Hughes, Mrs. Earl H. Hulsey, Fred F. Florence and Karl Hoblitzelle. A suitable marker will be placed on the grounds of the college in honor of the late Mrs. Hoblitzelle.

WEST VIRGINIA

Register of Active Tuberculosis Cases.—The bureau of tuberculosis of the state health department has set up a register of all active cases reported to supplant its former records, which consisted of one set of files containing both active and inactive cases. At the time the original tuberculosis file was divided into active and inactive cases the inactive case cards were placed in a closed file, the active ones being placed on the register, furnishing the initial points at which some measure of control would be directed. At the cessation of tuberculosis activity case cards will be removed from the working register and placed in the closed or inactive files. When reactivation is manifest the case card will be again placed on the register. Visible registers have already been set up in seventeen counties, and it is expected that by July 1 registers will have been installed in every local health department. The West Virginia Tuberculosis and Health Association plans to maintain registers for counties having no active health services until local personnel can be found to assume the responsibility. A reciprocal plan for interchange of information between local and state officers has been introduced. It is important that a report be made to the bureau of tuberculosis on every active case at six month intervals. As soon as the county and state registers are operating efficiently the bureau will be equipped to do cumulative analyses for any one county or for the state as a whole.

GENERAL

Management's Responsibility in Care of Employees.—The American Association of Industrial Physicians and Surgeons, in cooperation with the radio office of the University of Chicago, announces a round table broadcast over NBC's coast to coast network, Sunday, April 14, 12:30-1 p. m., central standard time. The topic will be "What Is Management's Responsibility in the Medical Care of Its Employees?" Invited speakers include Dr. Leo Price, medical director, Union Health Center, New York; Dr. Joseph H. Chivers, medical director, Crane Company, Chicago; Dr. Franklin C. McLean, professor of pathologic physiology, University of Chicago; Dr. John J. Wittmer, assistant vice president, Consolidated Edison Company, Inc., New York, and Dr. Lloyd Shoudy, director of medical service, Bethlehem Steel Company, Bethlehem, Pa.

American Surgical Association.—The 1946 meeting of the American Surgical Association will be held at the Homestead, Hot Springs, Va., April 2-4, under the presidency of Dr. William Darrach, New York. Among the speakers will be:

Dr. Frank H. Lahey, Boston, *Pharyngoesophageal Diverticulum: Its Management and Complications.*
Drs. Hilger P. Jenkins and Rudolph W. Janda, both of Chicago, Studies on the Use of Gelatin Sponge or Foam as a Hemostatic Agent.
Dr. Francis C. Grant, Philadelphia, Results in the Surgical Treatment of Ruptured Disks.
Drs. Arthur W. Allen, Boston, and Claude E. Welch, Belmont, Mass., Subtotal Gastrectomy for Duodenal Ulcer: A Report of Personal Experiences.
Dr. Allen O. Whipple, New York, Radical Surgery in Cases of Calcification of the Pancreas.
Dr. Daniel C. Elkin Atlanta, Ga., and Major Max H. Harris, M. C., Arteriovenous Aneurysm of the Vertebral Vessels: Report of 8 Cases.
Dr. Mercier Fauteux, Westmont, Que., Surgical Treatment of Angina Pectoris: Experiences with Ligation of the Great Cardiac Vein and Pericoronary Neurectomy.

Manuscripts Invited for Norton Medical Award.—The book publishing firm of W. W. Norton and Company announces that it is again inviting manuscripts for submission to be considered for the Norton Medical Award of $3,500 offered to encourage the writing of books on medicine and the medical profession for the layman. The first such award was made to The Doctor's Job, by Dr. Carl A. L. Binger, New York, published last spring, which gave the doctor's point of view on his work. The second was given to Dr. Edward H. Hume, New York, for his book Doctors East, Doctors West, to be published May 3 (The Journal, March 16, p. 728). Closing date for submission of manuscripts this year is November 1. All particulars relating to requirements and terms may be had by addressing W. W. Norton and Company, Inc., 70 Fifth Avenue, New York 11.

Public Health Association Opens Washington Office.—The subcommittee on medical care of the American Public Health Association, through a grant from the Rockefeller Foundation, has been enabled to establish an office in Washington with a full time technical staff and, according to its news bulletin, will turn its attention immediately to a review of proposed federal and state legislation, recommending to the association the stand it should take with regard to such legislation in the light of the declared principles. The subcommittee will provide information on the medical care problems to the public health profession and will attempt to stimulate leadership in the formation and stimulation of medical care programs. Also, according to the bulletin, it hopes to formulate in detail the specifications of a suitable medical care program and to describe the steps by which such a program can be established, including its organization, financing and administration. Howard M. Kline, Ph.D., has been appointed technical secretary.

Red Cross Establishes Division of Health Services.—The American Red Cross has established an "Office for Health Services" under the direction of a vice chairman for health services. Dr. G. Foard McGinnes has been appointed vice chairman. To the office for health services have been transferred the personnel and functions of (*a*) the office of the medical director, (*b*) nursing services, (*c*) first aid, water safety and accident prevention services, (*d*) nutrition service, (*e*) disaster medical and nursing service and (*f*) medical adviser, G. S. O. The vice chairman for health services is to be the principal health officer of the organization and is to provide for and supervise all liaison with the Offices of the Surgeons General of the Army, Navy and Public Health Service and other medical and health agencies. Cooperating with other vice chairmen, the vice chairman for health services will come under special offices in the area offices. He is also to have similar relationships to the Junior Red Cross, the college units and the insular and foreign operations.

American Association of Anatomists.—The fifty-ninth session of the American Association of Anatomists will be held in Cleveland, April 4-6, with Dr. Jacob P. Schaeffer, Philadelphia, acting as president. The program will be divided between Western Reserve University School of Medicine and the Hotel Statler. Included among the speakers will be:

Joseph E. Markee, Ph.D., Durham, N. C., The Morphological Basis for Menstrual Bleeding.
William F. Windle, Ph.D., and Roland F. Becker, Ph.D., both of Chicago, An Experimental Study of Neonatal Asphyxia.
Drs. Elisha S. Gurdjian and H. R. Lissner, M.S., both of Detroit, Study of Deformations of the Skull by the "Stresscoat" Technic.
James B. Hamilton, Ph.D., Brooklyn, A Secondary Sexual Character That Develops in Man but Not in Women on Aging of an Organ Present in Both Sexes.
Dr. Richard S. Farr, Chicago, Experiments on the Fate of the Transfused Leukocyte.
Edward A. Boyden, Ph.D., Minneapolis, Analysis of Variations of the Bronchopulmonary Segments in the Left Upper Lobes of Fifty Lungs.
Dr. William B. Atkinson, New York, The Production of Ovarian Hormones During Lactation in the Mouse.

Conference on Rural Health.—The first annual National Conference on Rural Health will be held at the Palmer House, Chicago, March 30. Sponsored by the Farm Foundation and the American Farm Bureau Federation, the session will be attended by representatives from each of these groups as well as from the National Grange, the National Farmers' Union and other farm agencies. The conference will follow immediately a three day meeting in Chicago of the Midwest leaders of the farm bureau and two farm representatives from each state as well as two or more representatives from each of the forty-nine state medical societies, including the District of Columbia. The program will include:

Dr. Franklin S. Crockett, Lafayette, Ind., chairman, Committee on Rural Medical Service, American Medical Association, Purpose of Conference.
Dr. Olin West, Chicago, Secretary and General Manager, American Medical Association, Address of Welcome.

Ransom E. Aldrich, Jackson, Miss., chairman, medical care committee, American Farm Bureau Federation.

Dr. Frederick R. Mott, Washington, D. C., U. S. Public Health Service, chief medical officer, Farm Security Administration, A Public Health Program for Rural Areas.

Howard Strong, Washington, D. C., secretary, health advisory council, U. S, Chamber of Commerce, Health Program for Small Communities.

Leland B. Tate, Ph.D., Chicago, rural health services, The Farm Foundation, Health Education for American Farmers.

Hon. J. Percy Priest, Nashville, Congressman, Sixth District, Tenn.

Included among the discussers on the program will be Dr. Leonard W. Larson, Bismarck, N. D., member, Committee on Rural Medical Service, American Medical Association; Dr. Victor Johnson, Secretary, Council on Medical Education and Hospitals; American Medical Association, and Mrs. Charles W. Sewell, Chicago, administrative director of Associated Women of the American Farm Bureau Federation. Covered in the formal program will be discussion of distribution of physicians, the proposed expansion of hospital and clinical facilities in rural areas as contemplated in the Hill-Burton bill now pending in Congress, physician benefits in returning to rural practice after completing an internship and health education of the rural population.

Aero Medical Association.—The seventeenth meeting of the Aero Medical Association of the United States will be held at the Edgewater Beach Hotel, April 7-9, under the presidency of Brig. Gen. Eugen I. G. Reinartz, United States Army. Speakers will include:

Col. Major S. White, M. C., Global Aviation Medicine in the Air Transport Command.

Major George M. Hass, M. C., The Effect of Aircraft Accidents on the Future of Flying Personnel.

Dr. Andrew C. Ivy, Chicago, Future of Research in Aviation Medicine.

Major George A. Hallenbeck, M. C., Parachute Opening Shock.

Dr. Thomas C. Gentry, New York, Aero Medical Experiences in China.

William G. Clark, Ph.D., Minneapolis, and Lieut. Comdr. Ralph L. Christy Jr. (MC), Use of the Human Centrifuge in the Indoctrination of a Navy Fighter Squadron in the Use of the Antiblackout Suit.

Capt. John B. Hickam, M. C., Studies of Missile Casualties in Fliers.

Col. Arnold D. Tuttle, U. S. Army, Ret., Chicago, Passenger Comfort in Commercial Aviation.

Major Edward C. White, M. C., and Lieut. Col. Randolph L. Clark Jr., M. C., The Management of Surgical Emergencies Following Aircraft Accidents.

Wing Comdr. Wilbur R. Franks, Royal Canadian Air Force, Acceleration—Certain Aspects.

Lieut. (jg) John L. Patterson Jr. (MC) and Capt. Ashton Graybiel (MC), A Simple Test of Physical Fitness for General Use.

Capt. Grace H. Stakeman, A. N. C., Medical Care of Casualties in Long Distance Air Evacuation.

Comdr. Howard R. Bierman, MC(S), U.S.N.R., Crash Injury.

Lieut. Col. Paul M. Fitts, A. C., Psychologic Requirements in Aviation Equipment Design.

Brig. Gen. Malcolm C. Grow, M. C., The Use of Body Armor in Aviation During Wartime.

William L. Burkhardt, Ph.D., Dr. Ivy, Dr. Arthur J. Atkinson and Howard Adler. Ph.D., Chicago, A Roentgenographic Study of Bends and Chokes at Altitude.

Major Gen. David N. W. Grant, Washington, D. C., Air Evacuation Activities.

Dr. Herbert Graebner, New York, Auditory Deterioration in Airline Pilots.

Lieut. Comdr. B. G. King, H(S), U. S. N. R., Mechanisms in Anoxia.

Lieut. Col. Robert C. Anderson, M. C., The Motivations of the Flier and His Reactions to the Stress of Flying.

Lieut. M. Henson, H(W), U.S.N.R., and Lieut. E. P. Vollmer H(S), U.S.N.R., Practical Considerations in Protection Against Anoxia.

Capt Francis E. Randall, A. C., Physical Principles Involved in Pilot Comfort and Efficiency.

Lieut. D. E. Goldman, H(S), U.S.N.R., Mechanical Forces Acting on Aviation Personnel.

Dr. Robert W. Keeton, Chicago, Civilian Aviation and Medical Education.

Wing Comdr. James K. W. Ferguson, Royal Canadian Air Force, Pulmonary Ventilation and Oxygen Requirements in Aircraft.

Capt. Fred S. Grodins, M. C., Capt. A. Lein, A. C., and Lieut. H. Adler, A. C., Changes in the Acid Base Balance in the Blood During Asphyxia and Resuscitation.

Dr. Austin E. Lamberts, Ann Arbor, Mich., Emergency Aid by Air in Isolated Regions.

Dr. William R. Stovall, Washington, D. C., Aviation Medicine and Physical Standards for Airmen.

Mr. Malcolm Y. McCormick, Washington, D. C., A Statistical Consideration of Physical Examinations and Performance Records.

Charles Sheard, Ph.D., Rochester, Minn., The Influence of Certain Physical and Physiologic Factors for Aero Medical Significance on the Rod and Cone Dark Adaptation.

J. B. Bateman, Ph.D., Rochester, Minn., The Effects of Pressure Breathing on the Skin Temperature of Extremities.

CORRECTION

Annual Conference of Secretaries and Editors.—In The Journal, March 9, page 647, appears the report of the Annual Conference of Secretaries and Editors. On page 652 is a discussion credited to Mr. H. T. Sethman, executive secretary of the Colorado State Medical Society. This should have been credited to Dr. A. C. Sudan of Kremmling, Colo., president-elect of the Colorado State Medical Society.

Government Services

New Head of Coast Guard Medical Division

Rear Admiral Paul M. Stewart, formerly chief inspection officer, Office of the Surgeon General of the U. S. Public Health Service, has been appointed chief of the Coast Guard Medical Division. Dr. Stewart graduated at the University of Cincinnati College of Medicine in 1914 and has been a member of the U. S. Public Health Service since 1914.

Laboratory Aides Ill From Research

The U. S. Public Health Service has reported that in its research to determine a cure for Q fever 22 laboratory workers have been stricken, 5 are in hospitals and 1, a woman elevator operator aged 70, is near death, according to press reports March 3. Other new cases were "suspected" among the 100 employees at the laboratory at Bethesda, Md. The research has been going on since the end of the war. According to Dr. Charles Armstrong, chief of the infectious disease division of the laboratory, while the disease is apparently communicable there is no reason to believe that the outbreak will spread beyond the laboratory. Dr. Armstrong, who has recovered from the disease, thinks he is now immune.

Examinations in Public Health Service

Examinations for appointments of medical officers in the regular corps of the U. S. Public Health Service will begin April 4 at various convenient localities throughout the country. Examinations are for appointments to fill vacancies of assistant surgeon (first lieutenant) and senior assistant surgeon (captain). Regular corps appointments are permanent. They provide qualified doctors with opportunities for a career in one or more of a number of fields, including research, general hospitals, special hospitals, foreign duty and public health programs. Assignments are made according to careful consideration of the officers' demonstrated abilities and experiences. It is expected that doctors now leaving the armed services will find the openings of particular interest. Entrance pay for assistant surgeon with dependents is $3,411 a year and for senior assistant surgeon with dependents is $3,991 a year. Promotions are at regular intervals up to and including the grade of medical director, which corresponds to full colonel at $7,951 a year. Retirement pay at 64 is $4,500 a year. Full medical care, including disability retirement at three-fourths pay, is provided. All expenses of official travel are paid by the government. Thirty days' annual leave with pay is provided. Applicants for the grade of assistant surgeon must be citizens of the United States, must present a diploma of graduation from a recognized medical school, must have had or be in the process of completing the seventh year of college or professional training or experience since high school graduation (two years premedical, four years of medicine, one year internship) and must have a physical examination at the place of oral examination by medical officers of the service. Applicants for the grade of senior assistant surgeon must meet the foregoing requirements and must have had four additional years of postgraduate training or experience.

Examinations will be oral and written. The written examination will be held on May 14, 15 and 16 at places convenient to the candidate and the service. National Board grades may be used for the assistant surgeon examination. The oral examination will be held at 9 a. m. at:

Atlanta, Ga.—Malaria Control in War Areas, 605 Volunteer Bldg., April 22.
Baltimore—Marine Hospital, Wyman Park Drive and 31st St., May 9.
Boston—Marine Hospital, 77 Warren St. (Brighton), May 6.
Chicago—Marine Hospital, 4141 Clarendon Ave., April 30-May 1.
Cleveland—Marine Hospital, Fairhill Road and E. 124th St., May 3.
Denver—617 Colorado Bldg., April 8.
Detroit—Marine Hospital, Windmill Pointe, May 2.
Fort Worth, Texas—U. S. Public Health Service Hospital, April 25.
Kirkwood, Mo., near St. Louis—Marine Hospital, 525 Couch Ave., April 26-27.
Los Angeles—U. S. P. H. S. Relief Station, 406 Federal Bldg., April 9.
Minneapolis—Office of Indian Affairs, 218 Federal Office Bldg., April 29.
New Orleans—Marine Hospital, 210 State St., April 23-24.
New York—Marine Hospital, Stapleton, Staten Island, May 7-8.
Norfolk—Marine Hospital, Hampton Blvd., Larchmont, May 10.
San Francisco—Marine Hospital, 14th Ave. and Park Blvd., April 10-11.
Seattle—Marine Hospital, Judkins and 14th Ave. South, April 12-13.
Washington, D. C.—U. S. P. H. S. Dispensary, Fourth and D Streets S.W., April 4 and May 13.

Application forms may be obtained by writing to the Surgeon General, U. S. Public Health Service, Washington 25, D. C.

Deaths

Charles F. Read ⊕ Elgin, Ill.; Rush Medical College, Chicago, 1901; born in Nevada, Iowa, May 27, 1876; specialist certified by the American Board of Psychiatry and Neurology, Inc.; formerly professor of neurology and psychiatry at the Loyola University School of Medicine and assistant professor of psychiatry at the University of Illinois College of Medicine, both in Chicago; past president of the Chicago Neurological Society and the Illinois Psychiatric Society; member of the National Committee for Mental Hygiene; state alienist from 1921 to 1925; since 1930 managing officer of the Elgin State Hospital; formerly managing officer of the East Moline (Ill.) State Hospital and the Chicago State Hospital; at one time staff physician and assistant superintendent of the State Hospital, Kankakee; formerly on the staffs of the Oak Park (Ill.) Hospital and the Mercy and Garfield Park hospitals in Chicago; editor, Manual for State Hospital Attendants and Elgin State Hospital Papers; awarded the honorary degree of doctor of science from Beloit (Wis.) College at its centennial convocation; died March 11, aged 69.

Maximilian Arthur Ramirez ⊕ New York; University and Bellevue Hospital Medical College, New York, 1912; born in Cuba May 17, 1891; professor of medicine at the New York Polyclinic Medical School and Hospital; specialist certified by the American Board of Internal Medicine; past president of the Medical Society of the County of New York; fellow of the American College of Physicians and the New York Academy of Medicine; served during World War I; Chevalier of the French Legion of Honor; attending physician and director of the second medical division of the French Hospital; attending physician, New York City Hospital, Welfare Island; attending physician, Municipal Sanatorium, Otisville; consulting physician, St. Francis Hospital, Poughkeepsie, St. Agnes Hospital, White Plains, and Downtown Hospital; died March 4, aged 54.

Robert Ward Lamson ⊕ Los Angeles; Harvard Medical School, Boston, 1925; born in Amherst, Mass., July 22, 1889; professor of medicine (preventive medicine and public health) at the University of Southern California School of Medicine; specialist certified by the American Board of Internal Medicine; fellow of the American College of Physicians; member of the American Association for the Study of Allergy; interned at the Stanford University Hospital in San Francisco; member of the staff, Hospital of the Good Samaritan; senior outpatient department, Los Angeles County Hospital; consulting surgeon, Santa Fe Coast Lines Hospital; in charge of allergy clinic, Eye and Ear Hospital and Olive View (Calif.) Sanatorium; died in St. Vincent's Hospital December 31, aged 56, of pneumonia.

A. Bern Hirsh ⊕ New York; Jefferson Medical College of Philadelphia, 1882; born in Lancaster, Pa., March 21, 1858; an Affiliate Fellow of the American Medical Association; in 1939 awarded a gold key by the American Congress of Physical Therapy for research work; in 1905 founded the *Weekly Roster and Medical Digest*, now known as *Philadelphia Medicine*, serving as its editor until 1917; established the *New York Medical Week*, serving as its editor and managing editor of its successor, the *Journal of the Medical Society of the County of New York*; formerly chief, physical therapy and occupational therapy, U. S. Veterans Bureau; served during World War I; died in Dobbs Ferry December 21, aged 87, of senility.

Lester Emanuel Frankenthal ⊕ Chicago; Chicago Medical College, 1885; born in Chicago, April 16, 1864; for many years clinical professor of gynecology at his *alma mater*, now known as the Northwestern University Medical School; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; member of the Chicago Gynecological Society and the Central Association of Obstetricians and Gynecologists; corresponding member of the Gynecological Society of Munich; fellow of the American College of Surgeons; senior attending obstetrician and gynecologist at the Michael Reese Hospital; formerly on the staff of St. Luke's Hospital, where he died December 19, aged 81, from complications following a fractured hip.

Nathan Pratt Sears ⊕ Syracuse, N. Y.; Johns Hopkins University School of Medicine, Baltimore, 1912; born in Syracuse, N. Y., in 1886; professor of gynecology at the Syracuse University College of Medicine; specialist certified by the American Board of Obstetrics and Gynecology, Inc.; member of the American Association of Obstetricians, Gynecologists and Abdominal Surgeons and the American Gynecological Society; fellow of the American College of Surgeons; consultant, Psychopathic Hospital, Syracuse General Hospital and the Hospital of the Good Shepherd, Syracuse University; gynecologist at the Syracuse Memorial Hospital, where he died February 25, aged 60, of aortic stenosis.

Wilbert Watkins Munsell ⊕ Surgeon, Lieutenant Commander, U. S. Navy, retired, Lexington, Mass.; the Hahnemann Medical College and Hospital, Chicago, 1901; born in Naples, N. Y., April 3, 1878; member of the Medical Society of the State of New York; entered the U. S. Naval Reserve as a lieutenant (jg) on May 14, 1918; transferred to the medical corps of the regular navy on May 19, 1921; placed on the retired list on Sept. 1, 1940 with the rank of lieutenant commander and because of exigencies of the service was retained on active duty; returned to inactive duty status on Jan. 15, 1943; died in the Memorial Hospital, Easton, Md., Sept. 22, 1943, aged 65, of intestinal obstruction.

Henry Mitchell Smith ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1893; born in 1870; emeritus professor of ophthalmology at his *alma mater*, where he first served in 1908 as instructor in diseases of the eye and later as clinical professor of diseases of the eye and for many years as professor of ophthalmology and head of the department; specialist certified by the American Board of Ophthalmology; fellow of the American College of Surgeons; consulting ophthalmologist at the Long Island College Hospital; served on the staffs of the Nyack (N. Y.) Hospital, Brooklyn Eye and Ear and Coney Island hospitals; died suddenly February 23, aged 75, of cerebral hemorrhage.

William Henry Lloyd ⊕ Major, U. S. Army, retired, Mount Victoria, Md.; University and Bellevue Hospital Medical College, New York, 1900; served during the Spanish-American War, as a captain in the New Mexico National Guard and in World War I; began active duty in the medical reserve corps of the U. S. Army as a first lieutenant on April 26, 1914, in 1917 becoming a major in the medical section of the Officers Reserve Corps; entered the medical corps of the U. S. Army as a major on July 1, 1920; retired Nov. 30, 1935 at his own request after twenty-two years' service; died February 14, aged 68, of coronary thrombosis.

Robert Lonial Bailey ⊕ Bremerton, Wash.; University of Texas School of Medicine, Galveston, 1934; interned at the Providence Hospital in Seattle; served a residency at the Northern State Hospital, Sedro Woolley, and on the staff of the Eastern State Hospital at Medical Lake; chief of medicine at Roosevelt Hospital, where he died December 31, aged 41, of cerebral hemorrhage.

Thomas Chenowith Baldwin ⊕ Port Orchard, Wash.; Rush Medical College, Chicago, 1903; chief medical examiner for Kitsap County during World War I; served as county health officer; staff physician, Washington's Veterans' Home in Retsil; medical examiner for the Metropolitan Life Insurance Company, New York Life and the Equitable Life Assurance companies; died in Virginia Mason Hospital, Seattle, December 6, aged 67, of carcinoma of the bile ducts.

Amos Willis Ball ⊕ Rushville, Ill.; Missouri Medical College, St. Louis, 1886; served as president of the Schuyler County Medical Society and on the local school board; died December 8, aged 84.

William Wesley Ballaine, Bellingham, Wash.; Kentucky University Medical Department, Louisville, 1902; member of the American Medical Association; past president of the Whatcom County Medical Society; in 1928 retired as health officer of Bellingham after twenty years of service; member and medical examiner for the local draft board during World War I; captain, medical reserve corps, U. S. Army, not on active duty; died December 1, aged 67.

William Martin Bigger, Hammond, Ind.; Medical Department of the Western University of Pennsylvania, Pittsburgh, 1897; member of the American Medical Association; served during World War I; died in St. Margaret Hospital December 30, aged 74, of uremia and chronic general vascular arteriosclerosis.

Alfred S. Black, Charleston, W. Va.; Medical College of Virginia, Richmond, 1902; died in a local hospital December 8, aged 83, of pneumonia.

John James Board, Rustburg, Va.; Jefferson Medical College of Philadelphia, 1880; member of the American Medical Association; died December 30, aged 86, of heart disease.

William Riley Bonds, Winfield, Ala.; Medical College of Alabama, Mobile, 1892; died December 25, aged 82, of carcinoma.

Ira Edgar Bowman, Odon, Ind.; Indiana University School of Medicine, Indianapolis, 1910; member of the American Medical Association; died in the Daviess County Hospital, Washington, December 30, aged 64, of carcinoma of the lung.

Ctimir Silas Brazda, Los Angeles; University of Illinois College of Medicine, Chicago, 1942; interned at the Los Angeles County Hospital, where he served a residency; also a D.D.S.; attending oral surgeon at the Los Angeles County General Hospital, the Queen of Angels Hospital and the Alhambra (Calif.) Hospital; died December 8, aged 46.

Bert Barrett Bruce, Alma, Ark.; Kansas City (Mo.) College of Medicine and Surgery, 1919; member of the American Medical Association; served as president and secretary of the Crawford County Medical Society; formerly county coroner; died December 13, aged 68, of generalized arteriosclerosis and acute coronary occlusion.

Annie Sophia Bullock ⊕ Alhambra, Calif.; Woman's Medical College of Pennsylvania, Philadelphia, 1912; on the staffs of the Alhambra Hospital, Alhambra, and the Garfield Hospital, Monterey Park; died December 6, aged 72, of cerebral hemorrhage.

Oscar Newton Clark, Greeley, Kan.; Eclectic Medical University, Kansas City, Mo.; 1915; Kansas City (Mo.) College of Medicine and Surgery, 1920; member of the American Medical Association; died December 7, aged 59, of coronary thrombosis.

Adolphus Jackson Crider ⊕ Dixon, Mo.; St. Louis University School of Medicine, 1910; died December 2, aged 60, of coronary occlusion.

Garland Franklin Cummins, Nashville, Tenn.; University of Nashville Medical Department and Vanderbilt University School of Medicine, Nashville, 1895; died in the Protestant Hospital December 15, aged 81.

John Francis Curtin ⊕ Minneapolis; Harvard Medical School, Boston, 1915; specialist certified by the American Board of Otolaryngology; member of the American Academy of Ophthalmology and Otolaryngology; served during World War I; on the staffs of the Asbury, Northwestern and St. Mary's hospitals; president of the medical staff of the Abbott Hospital; died December 25, aged 56, of carcinoma of the liver and sigmoid.

Charles Henry Cutler ⊕ Peterborough, N. H.; University of Vermont College of Medicine, Burlington, 1892; served as health officer and school physician; on the staff of the Peterborough Hospital; died December 22, aged 78, of arteriosclerosis.

John Edgar Davis ⊕ Columbus, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1889; served during World War I; died December 1, aged 78, of cardiorenal disease.

Joseph Vance Davis, Waynesville, N. C.; University of Pennsylvania School of Medicine, Philadelphia, 1945; found dead November 8, aged 24, near the administration building of the Peter Bent Brigham Hospital, Boston, where he was serving an internship.

Mary E. Snyder Davis, Colwyn, Pa.; Woman's Medical College of Pennsylvania, Philadelphia, 1892; died December 1, aged 80, of hypertensive cardiovascular disease.

J. Mercer Dickerson, Peoria, Ill.; Barnes Medical College, St. Louis, 1908; found dead in bed December 2, aged 69.

George McCready Dickson ⊕ Adamsburg, Pa.; Medical Department of the Western University of Pennsylvania, Pittsburgh, 1902; served during World War I; on the staff of the Westmoreland County Hospital, Greensburg, where he died December 13, aged 70, of carcinoma of the left lung and rheumatic heart disease.

Ernestine Doychert, Tucson, Ariz.; Medical Department of the University of California, San Francisco, 1900; died in St. Mary's Hospital December 1, aged 66, of coronary occlusion and chronic arthritis.

Daniel John Fennelly ⊕ Boston; Tufts College Medical School, Boston, 1911; served during World War I; neuropsychiatrist for the Veterans Administration in the Fall River area; on the staffs of the St. Luke's Hospital in New Bedford, Mass., and the Union and St. Anne's hospitals in Fall River; died December 20, aged 59, of coronary thrombosis.

Henry Andrew Fisher ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1909; member of the American Urological Association; fellow of the American College of Surgeons; specialist certified by the American Board of Urology, Inc.; served during World War I; colonel, medical reserve corps, U. S Army, not on active duty; formerly attending urologist, Brooklyn Hospital and Norwegian Lutheran Deaconesses' Home and Hospital; died December 4, aged 59.

Julius Frankel, New York; Cornell University Medical College, New York, 1900; formerly on the staffs of the Beth Israel, Manhattan General and St. Mark's hospitals; died in Miami, Fla., December 7, aged 70, of heart disease.

Vance A. Funk ⊕ Vincennes, Ind.; University of Nashville Medical Department, 1909; fellow of the American College of Surgeons; on the staff of the Good Samaritan Hospital; died December 31, aged 63, of coronary occlusion and arteriosclerosis.

Raymond V. Glann, Baltimore; Maryland Medical College, Baltimore, 1904; member of the American Medical Association; died December 4, aged 67, of coronary disease.

Stewart Hamilton, Detroit; Northwestern University Medical School, Chicago, 1905; also a graduate in pharmacy; member of the Michigan Hospital Association and the American Hospital Association; at one time instructor in pathology at the Detroit College of Medicine; medical director of the Harper Hospital; formerly assistant surgeon to the Copper Range Mining Company in Upper Peninsula; served during World War I; died December 18, aged 65, of cerebral hemorrhage.

John Thomas Hanna, Burlington, Iowa; State University of Iowa College of Medicine, Iowa City, 1915; served as acting assistant surgeon in the U. S. Public Health Service; major, medical reserve corps, U. S. Army, not on active duty; died in Milwaukee December 18, aged 55, of lobar pneumonia.

Edmund Lee Harrison, Kansas City, Mo.; University Medical College of Kansas City, 1892; member of the American Medical Association; formerly associated with the U. S. Veterans Bureau; died December 23, aged 82, of chronic myocarditis and arteriosclerosis.

Isaiah William Haughey ⊕ Fort Collins, Colo.; State University of Iowa College of Medicine, Iowa City, 1889; served during World War I; on the staff of the Larimer County Hospital; died December 5, aged 77, of cerebral hemorrhage.

James Worrall Henry, Cheyenne, Okla.; Columbia University College of Physicians and Surgeons, New York, 1912; member of the American Medical Association; died in Anadarko, December 26, aged 57, of congestive heart failure.

Gerhard William Heuser ⊕ Brooklyn; Cornell University Medical College, New York, 1904; on the staff of the Swedish Hospital, where he died December 29, aged 65, of coronary occlusion, bronchopneumonia and arteriosclerotic heart disease.

Carl R. Hiller ⊕ Cincinnati; Medical College of Ohio, Cincinnati, 1899; professor emeritus of clinical surgery, University of Cincinnati College of Medicine; member of the founders group of the American Board of Surgery; fellow of the American College of Surgeons; member of the board of trustees and past president of the College of Music; on the staffs of the Good Samaritan Hospital, Cincinnati General Hospital and the Jewish Hospital, where he died December 3, aged 68, of heart disease.

Benjamin Franklin Horner, Otsego, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1887; formerly member of the board of directors of the bank; on the staff of the Borgess Hospital in Kalamazoo, where he died December 16, aged 82, of complications due to a fractured hip received in a fall on the ice.

Siegfried Ickelheimer, Woodside, N. Y.; Ludwig-Maximilians-Universität Medizinische Fakultät, Munich, Bavaria, Germany, 1919; served in the German army during World War I; died December 16, aged 58.

John Dee Jackson ⊕ Kerrville, Texas; Washington University School of Medicine, St. Louis, 1914; member of the American College of Chest Physicians; on the staff of the Kerrville General Hospital; died suddenly December 31, aged 55, of heart disease.

Josephine Agnes Jackson, Long Beach, Calif.: Northwestern University Woman's Medical School, Chicago, 1896; Rush Medical College, Chicago, 1903; member of the American Medical Association; author of "Outwitting Our Nerves"; at one time on the staff of the Cook County Hospital in Chicago; died in Palo Alto December 31, aged 80, of heart disease and arteriosclerosis.

Archie Nelson Johnson, Kansas City, Mo.; University Medical College of Kansas City, 1903; member of the American Medical Association; member of the staff of St. Joseph Hospital; died in the Veterans Administration Facility, Wadsworth, Kan., December 6, aged 78.

Albert Bates Jones, Camano, Wash.; Maryland Medical College, Baltimore, 1904; died November 3, aged 74.

Boris Kaplan ⊕ New Bedford, Mass.; University of Saratov Faculty of Medicine, Russia, 1918; member of the National Gastroenterological Association; a major and medical officer in the Russian Imperial Army during World War I; on the staff of St. Luke's Hospital, where he died December 25, aged 56, of coronary thrombosis.

Brian Joseph Kelly ⊕ Frankfort, N. Y.; University and Bellevue Hospital Medical College, New York, 1915; mayor of Frankfort; past president of the board of education; chairman of the Herkimer County Democratic Committee; on the staffs of the Herkimer (N. Y.) Hospital, Little Falls (N. Y.) Hospital, Ilion (N. Y.) Hospital and St. Elizabeth Hospital in Utica; division surgeon New York Central Railroad; died December 17, aged 54, of coronary thrombosis.

Charles Anselm Kersey, Muncie, Ind.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1872; died December 23, aged 100, of bronchopneumonia.

Commodore Marvin Kimble, Paden City, W. Va.; Maryland Medical College, Baltimore, 1912; served as mayor of Paden City; on the staff of the Wetzel County Hospital, New Martinsville; died in the Johns Hopkins Hospital, Baltimore, December 14, aged 63, of carcinoma of the bladder.

Martin Smith Kirwan, Louisville, Ky.; Kentucky School of Medicine, Louisville, 1906; died in the SS Mary and Elizabeth Hospital December 23, aged 69, of hypertensive cardiovascular renal disease.

Joseph James Kotershall ⊕ Cleveland; University of Wooster Medical Department, Cleveland, 1903; for many years on the staff of St. John's Hospital; died December 10, aged 64, of arteriosclerotic heart disease.

Lieut. Alexander Henry Davis
(MC), U.S.N.R., 1906-1945

Capt. Lloyd B. James
M. C., A. U. S., 1906-1945

Lieut. Comdr. Alfred L. Lyons
(MC), U.S.N.R., 1899-1945

Albert Lenz ⊕ Schenectady, N. Y.; Albany (N. Y.) Medical College, 1912; member of the Radiological Society of North America, Inc.; consultant roentgenologist at the Mary McClellan Hospital in Cambridge; on the staff of the City Hospital; consulting surgeon, Ellis Hospital; died February 20, aged 57, of uremia and chronic nephrosclerosis.

George Mannheimer ⊕ New York; Kaiser-Wilhelms Universität Medizinische-Fakultät, Strassburg, Germany 1889; fellow of the American College of Physicians; consulting physician, New York Infirmary for Women and Children; died in the Mount Sinai Hospital December 10, aged 78, of cerebral hemorrhage.

James Walsh McClaran ⊕ Jackson, Tenn.; Vanderbilt University School of Medicine, Nashville, 1911; member of the Southeastern Surgical Congress; fellow of the American College of Surgeons; decorated by the French government for service with the French army during World War I; transferred to the American army on the entry of the United States into the war; division surgeon, Gulf, Mobile and Ohio Railroad; on the staff of the Memorial Hospital, where he died December 27, aged 57, of cerebral hemorrhage.

Edwin Taylor Morris ⊕ San Benito, Texas; University of Texas School of Medicine, Galveston, 1912; local physician and surgeon for the Missouri Pacific Railroad; died in Harlingen November 25, aged 58, of congestive heart disease.

James C. Mudd, Springfield, Ky.; Kentucky School of Medicine, Louisville, 1897; member of the American Medical Association; died December 1, aged 75, of heart disease.

Rudolf Patek, New York; Medizinische Fakultät der Universität Wien, Vienna, Austria, 1908; served a residency at the Sea View Hospital; died in the Westside Hospital November 17, aged 63, of pulmonary embolism following a prostatectomy.

Maurice Schneck ⊕ Forest Hills, N. Y.; Long Island College Hospital, Brooklyn, 1911; died February 25, aged 60, of coronary thrombosis.

KILLED IN ACTION

Alexander Henry Davis ⊕ Chicago; the School of Medicine of the Division of Biological Sciences, University of Chicago, 1932; interned at the University of Chicago Clinics; at one time affiliated with the Johns Hopkins Hospital in Baltimore; began active duty as a lieutenant in the medical corps of the U. S. Naval Reserve on Dec. 10, 1942; assigned to the U. S. Naval Hospital in San Diego; killed in the Asiatic area April 28, 1945, aged 39, when his ship, the U. S. S. *Pinckney*, was hit by a suicide bomber

Lloyd Bertram James ⊕ Fresno, Calif.; College of Medical Evangelists, Loma Linda-Los Angeles, 1932; interned at the Orange County Hospital in Orange; diplomate of the National Board of Medical Examiners; began active duty as a first lieutenant in the medical corps, Army of the United States, in September 1942; promoted to captain; flight surgeon in the Air Corps; killed in action in Tinian July 3, 1945 aged 39.

Alfred Labori Lyons ⊕ Flushing, N. Y.; Vanderbilt University School of Medicine, Nashville, Tenn., 1928; interned at the Long Island College Hospital in Brooklyn; formerly resident physician at the Clifton Springs Sanitarium and Clinic in Clifton Springs; on the staffs of the Queens General, Mary Immaculate and Triboro hospitals, all in Jamaica; served with the Canadian army during World War I; began active duty as a lieutenant commander in the medical corps of the U. S. Naval Reserve on Sept. 27, 1943; killed in action in the Pacific area April 28, 1945, aged 45, when a Japanese suicide plane crashed into an auxiliary hospital transport off Okinawa

Foreign Letters

LONDON

(From Our Regular Correspondent)

Feb. 23, 1946.

The Minister Who Won't Negotiate

It has been shown in previous letters that the scheme for a national health service is but the climax of the socialistic trend of British politics for many years. So strong is this trend that the scheme was introduced by a government in which the conservative party was predominant. The great majority of the medical profession were opposed to the scheme, but they had a conservative minister of health, with whom they could negotiate. The position changed much for the worse when a socialist government took the place of the coalition government. The conservative minister was immediately denounced for "surrendering to the doctors," though he had only negotiated with them, and his place was taken by a socialist, Mr. Bevan, who listens to the representatives of the medical profession but will not negotiate. He has put before them his proposals, which they are precluded from circulating to the profession because they are confidential. He has listened to the comments and criticisms of the negotiating committee of the profession but withheld his response until he has brought in the bill in the House of Commons. At the moment the position is one of complete calm—the calm before the storm. The *British Medical Journal* points out that, while Mr. Bevan is acting within his rights as a minister in not discussing his proposals, he would not be acting outside them if he freely exchanged views across the table with those chosen to represent the profession. It quotes with approval from the *Observer* "In its doctrinaire passion for nationalizing as much as possible as fast as possible" the cabinet "is minding everybody's business except its own."

Student Health Care Unsatisfactory

The Royal College of Physicians has published a report from its social and preventive medicine committee on student health services. Although the problem of sickness among university students is serious, many university authorities are indifferent to corrective measures. Only perfunctory attention, from the point of view of health, is paid in some instances to matters of diet and lodgings. The report recommends that the universities accept greater responsibility for the health of students. Arrangements should be made for medical examination on entry and for periodic examinations while at the university. Medical nursing care should be available to students who are ill. Inspection of lodgings should be undertaken by special officers of the university. It is recommended that the diet of students be improved, including the provision of canteens. It is further suggested that a special medical officer might do for universities and colleges what an industrial medical officer does in an enlightened industrial concern. What appears to be the first appointment of this kind has been made by the University of Aberdeen. It has appointed a full time physician at a salary of $4,280 a year to be in charge of the student health service.

The Danger of Vaginal Insufflation During Pregnancy

The danger of vaginal insufflation during pregnancy is shown by a case reported by Dr. C. H. Walsh to the North of England Obstetric and Gynecologic Society. A primigravida aged 17 was treated with picratol insufflations for leukorrhea at about the thirtieth week of pregnancy. The first insufflation did not produce discomfort. A week later insufflation was performed by a nurse with the patient lying in the left lateral position. Six or seven compressions of the insufflator bulb were made. The patient rapidly became cyanotic and dyspneic, became unconscious and died within five minutes. Necropsy revealed a fetus of thirty to thirty-one weeks' gestation. The placenta was attached to the posterior upper segment of the uterus. There was a small detachment at the lower border, with stripping of the membranes down to the cervix. A trace of picratol powder was found in a maternal sinus. The inferior vena cava was filled with air; the right auricle of the heart contained frothy blood. The cause of death was obstruction of a pulmonary artery and right heart failure due to air embolism.

The insufflator used delivered about 50 cc. of air and powder. If the rubber cone made an airtight connection between the introitus, six or seven compressions would introduce 350 cc. of air and powder at a pressure of at least 150 mm. Under these conditions even a small venule might absorb air, causing air embolism. Vaginal insufflation is contraindicated in pregnancy or in cases of bleeding from the uterus. Tubal insufflation should be discarded in favor of the iodized oil technic.

PARIS

(From Our Regular Correspondent)

Feb. 19, 1946.

Tuberculosis During the Wars of 1914 and 1939

L. Moine, statistician, has published a comparative study on tuberculosis mortality in the last two wars. During the war of 1914-1918 an increase of the tuberculosis death rate was noted. The death rate rose from 215 per hundred thousand inhabitants in 1910 to 278 in 1918, an increase of 29.3 per cent. During the war of 1939-1945 and the occupation it attained 159 in 1941, the highest rate, as against 120 in 1936, which represents an increase of 32.5 per cent. The Bulletin of General Statistics of France estimates the total number of deaths from tuberculosis as 315,000 for the period from September 1939 to May 1945. Children up to 2 years of age were severely stricken. An increase of 21 per cent for adolescents from 15 to 19 and of 88.5 per cent for men from 25 to 29 has been observed. The author concludes that this increase among men is due to their greater reaction to the restrictions and the hardships of life during the war and the occupation. The difficulty of placing patients in institutions has caused an increase of contact infection in families, especially among the poor.

Activity of the Epidemiologic Service

An epidemiologic service was organized in 1944 in the Departmental Public Office of Social Hygiene. In every "département" (district) the departmental inspector represents the health authority. The service consists of a secretary and of "assistantes sociales" (district nurses). In the department of the Seine from early in 1944 to October 1945, 7,189 infected women and 681 refractory patients were reported; 35 per cent of the former and 40 per cent of the latter were found. In accordance with the sanitary convention agreed to by forty-two countries, including France, in 1939, circulars have recently been issued by the prefects closing licensed brothels.

Antivenereal Measures in the Seine District

The Ministry of Public Health has published a circular which emphasizes previous orders making it obligatory for doctors to make a plain declaration, without a name, or a nominative declaration in the case of refractory patients, to the district (department) sanitary authority for every new case of venereal disease. The doctor must submit to patients the legal notice regarding the refusal to submit to treatment. He must also communicate to the departmental health service all information from the patient concerning the probable origin of the disease.

Miscellaneous

The Society of Medical Electroradiology of France, the Society of Electrotherapy and Radiology and the French Society of Physics commemorated, at an official meeting, the fiftieth anniversary of the discovery of the x-rays.

Prof. Henri Vincent, well known through his work on typhoid vaccination and gangrene, celebrated his fiftieth anniversary as a professor at the Val-de-Grace military hospital. He is a member of the Academy of Medicine and is general medical inspector of the French army. He is 83 years old and still pursues his scientific activity.

Dr. Hartmann, ophthalmologist of the Paris Hospitals, late associate professor of ophthalmology at Columbia University, delivered a lecture on "Medicine in the United States" and on "The Life of American Doctors."

Prof. Gaston Milian has died at the age of 74. He was well known in French dermatosyphilology and was among the first who introduced arsphenamine in France. His works on reactivation of the Bordet-Wassermann test, on the theory of biotropism, to which he has given his name, and his numerous studies on dermatology are widely known. He was a member of the Academy of Medicine and president of the League Against Venereal Disease.

PUERTO RICO

(From Our Regular Correspondent)

Feb. 15, 1946.

Pending Legislation

The following bills have been introduced in the House of Representatives and the Senate, now in regular annual session:

S. B. No. 114, to appropriate the sum of $518,000 to the Department of the Interior for the construction and equipment of new municipal hospital facilities and health centers, on recommendation of the commissioner of health, and to enlarge and reconstruct existing facilities. This appropriation shall be available July 1, 1946.

S. B. No. 100, to appropriate the sum of $900,000 to the University of Puerto Rico for scholarships to medical students during the fiscal years 1946-1947 to 1951-1952 inclusive.

H. B. No. 41, to appropriate the sum of $2,100,000 for the construction of hospitals and health units in Puerto Rico, to accept the benefits of federal grants-in-aid for the construction and equipment of hospital facilities and to determine the disposition of these funds.

The following bills are opposed by the Puerto Rico Medical Association and other professional groups in San Juan:

S. B. No. 9, to amend sections 2, 3, 4 and 6 of Act No. 26 of April 10, 1942, amended by Act No. 13, Nov. 23, 1942, to authorize the Board of Medical Examiners of Puerto Rico to permit the practice of medicine by issuing temporary licenses without previous examination, to establish rules and regulations by the board of medical examiners for the admission of graduate physicians from recognized medical schools to practice medicine in Puerto Rico provided that such licenses shall be valid only until June 30, 1950 and will be subject to revocation and to the provisions of any act that affects the practice of medicine in Puerto Rico. (This law is not applicable to candidates who failed in their examinations before the Medical Board of Puerto Rico or those who had not passed the required examination before the enforcement of this act.)

S. B. No. 8 amends sections 2, 3, 4 and 6 of Act No. 26 of 1942, providing that any graduate physician from a duly recognized university, at the discretion of the Board of Medical Examiners of Puerto Rico, may ask the board to issue him a license to practice his profession in any municipality of Puerto Rico or division of the insular government during the period of emergency determined by this act and under the terms and conditions expressed by this act. The purpose of this legislation is to permit the practice of medicine in this island by foreign physicians, who are authorized by this law to request such a provisional license from the board if certain requisites are filled by the candidate. Such physicians can practice their profession privately if they sign a contract to serve with any municipality in Puerto Rico under prescribed rules and regulations of the health commissioner. All candidates, however, must show evidence that they have finished a period of hospital training in their countries of origin for a period of at least one year after graduation from a recognized university or medical college. Not more than 100 foreign physicians would be admitted in Puerto Rico under this system of special licenses during the period of emergency specified by this act.

BUENOS AIRES

(From Our Regular Correspondent)

Jan. 5, 1946.

Quinidine Substitute

An interesting article was recently published in the *Ciencia e Investigación* by Drs. Venancio Deulofeu, Rafael Labriola, Oscar Orias and E. Moisset de Espanés of Buenos Aires and Alberto C. Taquini of Córdoba. They report experiments with the alkaloid alpha-fagarine, which has effects on the heart similar to those of quinidine. The credit of having isolated several alkaloids from a nut tree of the Fagaracea family belongs to Stuckert, who obtained the alpha, beta and gamma fagarines. Trees of this genus grow in large numbers in the northern and central areas of Argentina. The Argentine authors found that the formula of alpha-fagarine is $C_{19}H_{23}NO_4$ and they obtained accurate knowledge of the chemical structure of the substance. Stuckert and Sartori, while carrying on studies on the pharmacologic effects of the substance in batrachians and rabbits, found that it depresses the heart. The results of the experiments by Moisset de Espanés and Moyana Navarro on dogs indicated that alpha-fagarine causes depression of the heart. Chronaxia of the myocardial fibers is prolonged. The threshold of tachysystole and of auricular and ventricular fibrillation (as determined by the faradic current) is increased. The effects of alpha-fagarine on the last mentioned changes are greater than those of quinidine. Alpha-fagarine rapidly controls auricular fibrillation, spontaneously developed during experimental exposure of the animal's heart, and diminishes the danger of primary ventricular fibrillation following experimental coronary occlusion in dogs, whereas quinidine lacks this effect. Rabbits and dogs tolerated doses of 5 mg. of alpha-fagarine for each kilogram of body weight by the intravenous route. The dose was administered intravenously three times a day for forty-five consecutive days. The animals did not show any toxic reactions.

Taquini administered alpha-fagarine to 6 patients with auricular fibrillation. The patients had been observed for several months before administration of the alpha-fagarine. Four patients in the group had coronary heart disease and 2 had rheumatic heart disease (mitral stenosis). Quinidine in the ordinary doses had failed in 5 cases. Alpha-fagarine was administered intramuscularly in only one dose, which varied from 0.06 to 0.10 Gm., after failure of quinidine. Sinus rhythm was reestablished within thirty minutes after administration of the drug in all cases. Because of these results the authors believe that alpha-fagarine is an important drug in the therapy of heart diseases and in certain disorders of cardiac rhythm.

Sanitation in Chile

Dr. Nacianceno Romero y O., head of the National Department of Public Health, recently published a report on the functions, aims and work carried on by the department in the last few years. They include (1) education of technicians for public sanitation, (2) work on sanitation in Chile, (3) campaigns against infectious diseases, (4) organization of units of sanitation and health centers and (5) establishment of the proper postwar sanitary measures in relations with other countries of the world. In dealing with infectious diseases it was found that the outbreak of smallpox which occurred in the northern region of Chile was imported by a foreign family who entered the country with the disease. During the epidemic 35 cases of the disease with 7 deaths were reported. In the city of Santiago 500,000 persons reported for vaccination. Certain experiments carried out in Chile resulted in the development of a combined vaccine for diphtheria and whooping cough. The vaccine is still in the experimental stage. The number of cases of typhoid is about 5,000 a year, with a death rate of 10 per cent. Tuberculosis is an acute problem in Chile. Reporting the cases is not obligatory. The disease is second as a cause of death. The number of beds available for tuberculous patients in the acute stage of infection is far below that which is necessary. The disease is epidemic throughout the country. The most necessary measure is the isolation of patients who are infectious. The patients are a menace for the health of others at home, in the streets and at work. Typhus exists but does not justify alarm. Meningococcic meningitis and scarlet fever are epidemic in the country. However, the proper statistical significance is not given to these diseases. Seven hundred cases of anthrax were reported in 1943. The disease can be prevented by proper care of workers. The laws of Chile are not satisfactory.

A law was passed in March 1943 by which the chief of the National General Department of Public Health was authorized by the government to organize an energetic crusade against venereal disease, which constitutes one of the most acute problems in Chile. Patients with early syphilis have therapy with "massive" doses of arsenicals. The treatment is administered in antisyphilitic centers. Penicillin is to be administered in certain cases. A committee for supervision of industrial hygiene and protection of workers was established in 1943. Attention has been given to possible or actual poisoning of miners working in manganese mines as well as to silicosis. General and infant mortality has diminished. The death rate of infants from birth to 1 year of age was 231 for 5,000 births of living infants in 1934 and 155 for the same number of births in 1943. The general death rate diminished from 26 deaths per thousand persons in 1934 to 19 in 1943.

Brief News Notes

Dr. Nerio Rojas, professor of legal medicine, has been appointed dean of the Faculty of Medicine of the University of Buenos Aires.

The following doctors were appointed to the Academia Nacional de Medicina: Drs. Gregorio Aráoz Alfaro and Carlos Bonorino Udaondo, president and vice president, respectively; Drs. Florencio Etcheverry Boneo and Mario J. del Carril, honorary and actual secretaries, respectively; Dr. Juan M. Obarrio, treasurer; Dr. Pedro A. Maissa, regular academic member; Drs. Fortunato Quesada and Francisco Graña (Peru) were appointed honorary Latin-American members; Dr. Carlos Enrique Paz Soldán (Peru), Latin-American corresponding member, and Dr. E. Meulengracht (Denmark), foreign corresponding member.

New branches of the hemotherapeutic center of the state are to be organized in the military hospitals of Paraná, Córdoba, Tucumán, Mendoza, Salta and Campo de Mayo by resolution of the authorities at the National Ministry of War.

Dr. Benardo A. Houssay, professor of physiology of the Faculty of Medicine of the University of Buenos Aires, was recently appointed foreign member of the Royal Academy of Sciences of Sweden.

Dr. Mariano R. Castex, regular professor of clinical medicine of the Faculty of Medicine of the University of Buenos Aires, was recently appointed doctor *honoris causa* of the university at the request of the Faculty of Medicine of Paris.

Crusade Against Tuberculosis

Dr. Livio R. Zunino is the head of the Manuel de Abreu Center for photographic and roentgen census of tuberculosis. In the five years from 1939 to 1944 examinations were carried out on 249,286 persons. The tuberculosis rate was found to be 6.68 per cent in persons who lived with patients with tuberculosis and 2.43 per cent in the group not living with tuberculous patients. The number of patients with tuberculosis discovered by the examination was 12,612 out of 249,286 persons examined. The disease was in an early stage in the majority of instances. Permanent recovery of 90 per cent of the patients was obtained with the proper therapy. Patients who are sent by their physicians to the center for x-ray examination pay 2 Argentine pesos ($0.48) for the roentgenograms, whereas those sent by dispensaries or from hospitals pay 1 Argentine peso ($0.24).

BRAZIL

(From Our Regular Correspondent)

São Paulo, Feb. 23, 1946.

Chemotherapy of Tuberculosis and Leprosy

Dr. E. Biocca read a paper before the Society of Biology of São Paulo describing his studies on the tuberculostatic value in vitro of the trichloroacetylic radical, of numerous azo compounds, of two organic cupric derivatives of sulfanilamide, of derivatives of nitroaminodiphenylsulfone and diaminodiphenylsulfone. The compounds with organic sulfur were prepared by Professor Quintino Mingoja and Dr. Berti in the Laboratório Paulista de Biologia; the others were prepared by Professor Senise in the Laboratório of Quimica of the Faculdade de Filosofia of the University of São Paulo. It has been possible for Dr. Biocca to confirm the high tuberculostatic value in vitro of the trichloroacetylic radical. This property could be shown only when the trichloroacetylic radical was bound to a benzene ring in an aminic function. The trichloroacetylic radical bound in an aminic function, without the benzene ring (trichloroacetamide) as well as a benzene ring bound to a simple acetylic group (acetanilide) did not present any evident tuberculostatic value.

Among the azo-derivatives the most evident bacteriostatic antituberculosis activity in vitro was shown by an x-benzene-B-trichloroacetylnaphthylamine.

A cupric organic derivative was strongly tuberculostatic, but at the same time highly toxic for animals. The following sulfonamides, as has been observed by several authors, were strongly tuberculostatic in vitro: sulfathiazole, sulfapyridine, sulfadiazine, sulfamerazine and N'acetylsulfanilamide.

Among derivatives of 4-nitro-4'aminodiphenylsulfone, Schiff's bases, acetylderivatives and sulfones with halogenated radicals were more effective than the formylderivative 117 M and the trichloroacetylic derivative.

Of the derivatives of 4-4' diaminodiphenylsulfone the 4-4' ditrichloroacetyldiaminodiphenylsulfone Diclorane and the 4-4' diformyldiaminodiphenylsulfone Formilone are compounds of the highest interest in the chemotherapy of alcohol-acid fast microbes.

Marriages

William Thomas Daniel, Franklin, Tenn., to Capt. Ruth Stratton, Army Nurse Corps, in Beaver Falls, Pa., February 1.

Harold Preston Burbage to Miss Zylphya Elizabeth Haywood, both of Charleston, S. C., in Columbia, December 27.

George Allyn Chapman, Shenandoah Caverns, Va., to Lieut. Gladys Fulk, Army Nurse Corps, in Richmond recently.

David Sanford Citron, Charlotte, N. C., to Miss Doris Berman of Waterbury, Conn., in St. Louis, February 14.

B. S. Henry, Darling, Miss., to Miss Emily Mary Theresa Johnston of Oxford, England, Sept. 30, 1944.

John David Taylor, Winston-Salem, N. C., to Miss Alma Louise Moore at St. Pauls, February 8.

Franklin Bernard Ott, Newark, N. J., to Miss Claire Moriarty of Maplewood, February 16.

Roy W. Johnson, Los Angeles, to Miss Merle Barfield at Riverside, Calif., December 29.

Ely Elliott Lazarus to Miss Joy Sue Koslow, both of New York, February 1.

Rotan Lee, Bushkill, Pa., to Miss Bessie O. Hart of Steelton, January 5.

Bureau of Investigation

MISBRANDED PRODUCTS

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the Federal Security Agency

[EDITORIAL NOTE.—These Notices of Judgment are issued under the Food, Drug and Cosmetic Act, and in cases in which they refer to drugs and devices they are designated D.D.N.J. and foods, F.N.J. The abstracts that follow are given in the briefest possible form: (1) the name of the product; (2) the name of the manufacturer, shipper or consigner; (3) the date of shipment; (4) the composition; (5) the reason for the charge of misbranding, and (6) the date of issuance of the Notice of Judgment.]

Bio-Mineral.—Bio-Mineral Products Company, Detroit Shipped Dec. 21 and 22, 1942, and Jan. 2, 1943. Composition: essentially a watery solution of ferric sulfate (about 3.4 grains per teaspoonful), smaller amounts of the sulfates of aluminum, calcium and magnesium, and a phosphate. Misbranded for these reasons, among others. that label falsely represented product effective for rheumatism, constipation, weak kidneys, colonic disorders, hemorrhoids and appendicitis; that despite label claims, the mixture, when taken as directed, would not supply any mineral except iron that would substantially supplement mineral deficiency, and because label statement of composition failed to mention that, of the various ingredients declared, none except ferric sulfate was of any material significance when product was taken as directed —[*D. D. N. J., F. D. C. 989, November 1944*] Later actions brought against this concern were *D. D. N. J. 1180 and 1245, both issued in June 1945.*

Domino Brand Antiseptic Rubbing Compound.—Halitosine Company, St. Louis. Shipped between Sept. 19 and Oct. 9, 1941. Composition: essentially water, isopropyl alcohol approximately 9 per cent by volume, methyl salicylate, boric acid and menthol. Misbranded because quantity was less than label stated; because of false label claim, "Antiseptic," which the product was not, and because label falsely represented that product was rubbing alcohol or its equivalent.—[*D. D. N. J., F. D. C. 935; October 1944*]

Domino Brand Superior Rubbing Compound.—Halitosine Company, St. Louis. Shipped Aug. 29 and Oct. 8, 1942 Composition: essentially water and 23 per cent of isopropyl alcohol, with small amounts of boric acid, thymol, menthol and methyl salicylate. Misbranded because name and label directions for massaging and sponging falsely represented product to be extensively marketed as a rubbing alcohol compound and to contain approximately 70 per cent of alcohol or its equivalent, whereas it contained only 23 per cent of isopropyl alcohol —[*D. D. N. J., F. D. C. 983, November 1944.*]

DPS Formula 50.—Dartell Laboratories, Los Angeles Shipped June 19 and July 9, 1942 Adulterated and misbranded because of false label claim: "Each Tablet Contains Not Less Than . . . Vitamin B_2 348 Gammas."—[*D. D. N. J., F. D. C. 968; November 1944.*] Also adulterated and misbranded under the provisions of the law applicable to foods, as reported in *F. N J. 5776*

Elixir Quinux.—S. F. Durst & Company, Philadelphia. Shipped March 20, 1942. Adulterated and misbranded because falsely represented on label to contain 2 grains of quinine sulfate per fluid ounce, whereas it contained not more than 0.42 grain of this substance per fluid ounce.—[*D D. N. J., F. D. C. 962, November 1944.*]

Formula 8-12 Vitamins-Minerals.—*Universal Products Company*, Cleveland. Shipped Jan. 10 to 14, 1943. Composition claimed on label soy bean meal, wheat embryo, gum karaya, brewer's yeast, kaolin, kelp, activated ergosterol, natural vitamin A ester, thiamin hydrochloride, riboflavin, dicalcium phosphate, iron bihydrogen (sic!), potassium iodide and oil of orange Misbranded because falsely represented that product was of significant nutritional value because of its vitamin E, vitamin B_6 and other factors of the B complex as found in brewer's yeast and the elements potassium, sulfur, sodium, magnesium, copper, zinc, chlorine and manganese; and use of the product would insure normal functioning of the brain, eye, pituitary gland, parathyroid gland, thymus, heart, liver, gall bladder, kidneys, prostate and many other organs —[*D D. N J, F D. C. 944; October 1944.*] Also declared misbranded under the provisions of the law applicable to foods, as reported in *F. N. J. 5793.*

R & R Ultra Violet Ray and Radiation Machine—Lawndale Laboratories, Lawndale, Calif. Shipped June 29, 1942. A high voltage mercury vapor discharge tube. Misbranded because of these label misrepresentations, among others. that the device would cure or prevent arthritis, acne, asthma, gout, jaundice, carbuncles, anemia, goiter, deafness, erysipelas, locomotor ataxia, psoriasis, female trouble and many other disorders, and that it would give off ultra violet rays of adequate intensity to produce in the body vitamin D in an amount sufficient to compensate in an important respect for the deficiency of vitamin D resulting from indoor occupations and unfavorable climatic conditions, whereas the device would produce ultra violet rays of only weak intensity and supply little, if any, vitamin D to the body.—[*D. D. N. J., F. D. C. 981, November 1944.*]

Vitaminerals.—Vitaminerals Company, Los Angeles. Shipped between May 5 and 27, 1942. Consignment comprised quantities of Vitaminerals VM 1, 1+, 100 and 120 The first two contained various plant materials, the third, minerals, and the fourth, sulfates of iron and aluminum, with glycerin and water Misbranded because of label misrepresentations that No 1 would help arthritis, colds, hemorrhoids, neuralgia, neurosis, obesity and tonsillitis; No 1+, most of the same disorders and a few more; No 100, female complaints, and No 120, colonic, ear and throat troubles, anemia, asthma and many other conditions —[*D D N. J, F. D. C. 946, October 1944*] Under *D D. N. J. 1041*, issued in March 1945, Vitaminerals VM Nos 1, 100, 120 and 150 and 204 Pneumatic Dilator (a device sold for rectal disorders) were declared misbranded because of label misrepresentation

Correspondence

NOCTURNAL GASTRIC SECRETION IN DUODENAL ULCER

To the Editor:—In the paper on "Nocturnal Gastric Secretion in Duodenal Ulcer" by Sandweiss and others in THE JOURNAL, February 2, the following data were presented:

1. Both normal persons and patients with duodenal ulcer secrete acid gastric juice during the night of approximately the same hydrochloric acid concentration following 6 p. m. meals.

2. Under the same conditions as 1 the volume of the gastric juice obtained by continuous suction is approximately the same.

3. When intermittent single aspirations are performed, duodenal ulcer patients have a greater volume of gastric juice than normal persons, whereby it is shown that this increased volume is not caused by hypersecretion but by delayed emptying.

It seems that so wedded is the mind of gastroenterologists to the importance of hypersecretion and increased hydrochloric acid in duodenal ulcer that quite other evidence is discussed by them as though it supported their attitude. Thus in the discussion following the paper Dr. Walter C. Alvarez says:

> Sandweiss and his associates have confirmed the fact that the person with ulcer tends to go on secreting after his stomach is emptied for the night.

But apparently this happened to their normal controls too. Obviously in this respect, then, no special characteristic behavior of the ulcer patient has been shown. Dr. Burrill B. Crohn says:

> The important conclusion from this paper is the necessity for the treatment during the night by some means . . . to obtain a neutralization of the night secretion in the ulcer cases.

Since the night secretion in ulcer cases did not differ from that in the normal controls, the question naturally arises Why treat normal conditions?

Dr. A. C. Ivy says:

> However, we find, as others, that some asymptomatic subjects secrete as much interdigestive secretion as patients with an active duodenal ulcer. Thus the factor which I suspect caused the observations of those authors to be somewhat out of line with those of others is that the ulcer in their patients was relatively inactive.

If I understand English, I should say that the second of Dr. Ivy's sentences is a perfect *non sequitur.* He continues further:

> Since it has in my opinion been established that free acidity is one of the chronicity factors in peptic ulcer, the authors are justified in calling attention to the significance of the "night secretion" especially in that group of patients who tend to be refractory to management.

To a nongastroenterologist, this paper shows delayed emptying of the gastric contents to be the distinctive feature in the ulcer cases. It is entirely illogical to use this observation in support of the importance of hypersecretion and hyperchlorhydria

Apparently it is difficult to allow a new observation to change the pattern of our accustomed thought.

ALICE R. BERNHEIM, M.D., New York

MALARIA IN ST. LOUIS AREA

To the Editor:—The following observation regarding tropical types of malaria transplanted to the St. Louis area may be of some interest:

I was a resident in the St. Louis City Hospital from June 1904 to June 1910. The St. Louis World's Fair held in 1904 attracted many visitors from all parts of the world. Many came from tropical and subtropical countries and islands. Many of these tropical visitors were residents in the various concessions at the fair for about seven months in 1904.

Our local mosquitoes naturally became carriers for almost all types of malaria. Before 1904 our City Hospital records showed an average admission of 1 to 3 malaria patients daily during the summer and fall months. During 1904 quite a number of malaria patients, residents at the fair, from the tropics were admitted to the hospital, suffering from estivoautumnal and other tropical types of malaria. Local residents during this season were not much affected. During the late spring, summer and fall of 1905, however, we frequently averaged 25 to 35 or more malaria patients daily, mostly residents of our local territory. These persons were suffering from all types of malaria, and during this period 7 were admitted suffering from so-called congestive chills or malignant malaria and died within a few hours or two to three days after admission.

During the malaria season of 1906 the malaria admission rate dropped to less than one third of 1905, and after 1907 the normal average of before 1904 was struck and maintained.

I have not had time to compile exact statistics. This might prove to be an interesting research, but the figures cited are approximately correct.

CLEVELAND H. SHUTT, M.D., St. Louis.

BLOOD GROUPING

To the Editor:—In THE JOURNAL, January 12, Dr. James D. Edgar directs attention to what he justifiably suspects is an error in my article (THE JOURNAL, Nov. 17, 1945, p. 801) in reporting the infant of a mother of blood group AB as belonging to group O. This erroneous report resulted from the blood type determination having been made in the early newborn period before the blood group characteristics were adequately established. It seems improbable that there was sufficient transfused blood of group O present in this infant's circulation to have contributed significantly to this erroneous result. When the blood was again checked at the approximate age of 7 months it was found to be of blood group B. The theory of Bernstein thus remains unchallenged. Regrettably because this infant's ABO blood type had no direct relationship to the essential thesis of the paper, the laboratory report of this finding did not receive sufficiently critical attention.

CLIFFORD H. HARVILLE, M.D., Warsaw, N. Y.

RETROGRADE INJECTION

To the Editor:—The term "retrograde injection," when it is used with reference to varicose veins, is ambiguous. The ambiguity arises from the fact that the flow of blood in varicose veins is reversed (Trendelenburg positive). Consequently a type of injection which, if made into a normal vein, would be properly designated "retrograde" (against the normal direction of flow) could not be so designated if the injection should be made into a varicose vein in which the flow was reversed. However, I doubt if authors or readers generally will keep in mind the suggested distinctions and, for clearness, I believe it will be necessary for authors who use the word "retrograde" in writing of varicose veins to explain their use of it.

FREDERICK L. SMITH, M.D., Rochester, Minn.

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS
EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Board in Specialties were published in THE JOURNAL, March 16, page 735.

BOARDS OF MEDICAL EXAMINERS

ARIZONA:* *Examination.* Phoenix, April 2-3. *Endorsement.* Phoenix, April 6. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

ARKANSAS:* *Medical.* Little Rock, June 6-7. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, June 6. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

CONNECTICUT:* *Endorsement.* New Haven, March 26. Sec. to the Board, Dr. Creighton Barker, 258 Church St., New Haven.

DELAWARE: *Examination.* Dover, April 9. *Reciprocity.* Dover, April 16. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

FLORIDA:* Jacksonville, June 24-25. Sec., Dr. Harold D. Van Schaik, 2736 S.W. Seventh Ave., Miami 36.

GEORGIA: Atlanta and Augusta, March 27-28. Sec., State Examining Boards, Mr. R. C. Coleman, 111 State Capitol, Atlanta 3.

HAWAII: Honolulu, July 8-11. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

IDAHO: Boise, July 9. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.

ILLINOIS: *Examination.* Chicago, April 2-3. *Reciprocity.* Chicago, April 4. Supt. of Registration, Department of Registration & Education, Mr. Philip Harman, Springfield.

INDIANA: Indianapolis, April 25-27. Sec., Board of Medical Registration & Examination, Dr. W. C. Moore, 301 State House, Indianapolis 4.

IOWA:* Iowa City, March 25-27. Dir., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

KENTUCKY: Louisville, March 25-27. Sec., State Board of Health, Dr Philip E. Blackerby, 620 S Third St., Louisville 2.

MARYLAND: *Homeopathic.* Baltimore, June 18-19. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

MICHIGAN:* Detroit, March 26-28. Sec., Board of Registration in Medicine, Dr. J. E. McIntyre, 100 W. Allegan St., Lansing 8.

MINNESOTA:* March 26 and April 16. Sec., Dr. J. F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul 2.

MISSISSIPPI: June. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson 113.

MONTANA: Helena, April 1-3. Sec., Dr. O. G. Klein, First National Bank Bldg., Helena.

NEBRASKA:* Omaha, March 25-27. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

NEVADA: Carson City, May 6. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

NEW JERSEY Trenton, June 18-19. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

NEW MEXICO:* Santa Fe, April 8-9. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

NEW YORK: Albany, Buffalo, New York and Syracuse, June 24-27. Sec., Dr. Jacob L. Lochner, Education Bldg., Albany.

NORTH CAROLINA: Raleigh, March 25-28. Act. Sec., Mrs. Louise J. McNeill, 226 Hillsboro St., Raleigh.

NORTH DAKOTA: Grand Forks, July 2-5. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

OREGON:* *Endorsement.* Portland, April 27. *Examination.* Portland, July 24-26. Exec. Sec., Miss Lorienne M. Conlee, 608 Failing Bldg., Portland 4.

PENNSYLVANIA: Philadelphia and Pittsburgh, April. Act. Sec., Bureau of Professional Licensing [illegible] Mrs. M. G. Steiner, 351 Education

RHODE ISLAND: Prov [illegible] f Examiners, Mr. Thomas B. Casey, 3

SOUTH DAKOTA:* Pi [illegible] ensure, State Board of Health, Dr. G

TENNESSEE:* Memph[illegible] Sec., Dr. H. W. Qualls, 130 Madison Ave., Memphis 3.

TEXAS: Austin, March 27-29. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2

VERMONT: Burlington, March or April. Sec., Dr. F. J. Lawliss, Richford.

VIRGINIA:* Richmond, March 25-28. Sec., Dr. J. W. Preston, 803 Medical Arts Bldg., Roanoke.

WASHINGTON:* Seattle, July 11-12. Sec., Department of Licenses, Miss Nell Adams, Olympia.

WEST VIRGINIA: Charleston, April 1-3. Commissioner, Public Health Council, Dr. John E. Offner, State Capitol, Charleston 5.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

ARKANSAS: Little Rock, May 1. Sec., Mr. L. E. Gebauer, 701 Main St., Little Rock.

DISTRICT OF COLUMBIA: Washington, April 22-23. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

FLORIDA: Gainesville, June 4. Final date for filing application is May 20. Sec. Dr. J. F. Conn, John B. Stetson University, DeLand.

IOWA: Des Moines, April 9. Dir., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

MICHIGAN: Ann Arbor and Detroit, May 10-11. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

MINNESOTA: Minneapolis, April 2-3. Sec., Dr. Raymond N. Bieter, 126 Millard Hall, University of Minnesota, Minneapolis 14.

NEBRASKA: Omaha, May 7-8. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

TENNESSEE: Memphis and Nashville, March 25-26. Sec., Dr. O. W. Hyman, 874 Union Ave., Memphis.

WISCONSIN: Madison, April 6. Prof. R. N. Bauer, 152 W. Wisconsin Ave., Milwaukee 3.

POSTGRADUATE CONTINUATION COURSES FOR VETERAN AND CIVILIAN PHYSICIANS

(Supplementary to listings published in the Journal Dec. 8, 1945, Vol. 129, pp. 1046-1059 and March 2, 1946, Vol. 130, pp. 602-603)

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
	ANATOMY		
Wayne University College of Medicine, 1516 St Antoine St Detroit	Anatomy	Begins April 8, 1946 Spring quarter	*Arranged*
	BACTERIOLOGY		
Wayne University College of Medicine, 1516 St Antoine St, *Detroit*	Bacteriology	*Begins April 8, 1946 Spring quarter*	$ 50
	CHEST DISEASES		
American College of Chest Physicians, 500 N Dearborn St., Chicago At Michael Reese Hospital	Postgraduate Course in Diseases of the Chest	April 1 6, 1946	50
University of Illinois College of Medicine, 1853 W. Polk St, Chicago	Course in Broncho Esophagology	June 3 15, 1946, 2 weeks	100
Columbia University College of Physicians and Surgeons New York At Bellevue Hospital	*Chest Diseases*	*Oct 7, 1946, 2 weeks*	*50*
Trudeau School of Tuberculosis, Saranac Lake, N Y	Tuberculosis	Sept 9, 1946, 4 weeks	100
	CARDIOVASCULAR DISEASES		
Harvard Medical School Courses for Graduates, 25 Shattuck St Boston			
At Peter Bent Brigham Hospital	Cardiology	July 1 31, 1946, 1 month	150
At Beth Israel Hospital	Cardiology	*April 1 July 31, 1946, 3 months*	*500*
	DERMATOLOGY AND SYPHILOLOGY		
Wayne University College of Medicine, 1516 St Antoine St, Detroit At Social Hygiene Clinic and Receiving Hospital	Dermatology and Syphilology	Begins April 8, 1946, 4 weeks	Arranged
Columbia University Faculty of Medicine, 630 W 168th St, New York	Dermatology	2 to 6 months, 1st day of any month	per month *55*
	GASTROENTEROLOGY		
Tulane University School of Medicine, 1430 Tulane Ave, New Orleans	Gastrointestinal Diseases	March 25 30 1946 5 days	Not stated
	MEDICINE, GENERAL		
University of Southern California School of Medicine, 3551 University Ave *Los Angeles* At Los Angeles County Hospital	Review of Internal Medicine	Every 3 months beginning Dec 17 1945, 3 months	1[illegible]
American College of Physicians, 4200 Pine St, Philadelphia At University of California, San Francisco	*Course in Internal Medicine*	*June 17 28, 1946, 2 weeks*	*Not stated*
Tulane University School of Medicine, 1430 Tulane Ave, New Orleans	Infectious Diseases Neoplastic Diseases	April 29 May 4, 1946 May 6 11, 1946	*Not stated* *Not stated*
Harvard Medical School Courses for Graduates, 25 Shattuck St, Boston At Massachusetts General Hospital	Internal Medicine	June 17 July 27, 1946, 6 weeks	*200*
Tufts Medical School Postgraduate *Division, 30 Bennet St.*, Boston	Internal Medicine	1 month, arranged	*50*
Wayne *University* College of Medicine, 1516 St Antoine St., Detroit *At Receiving Hospital*	*Internal Medicine*	Begins April 8 1946 Spring quarter	*Arranged*
Washington University School of Medicine, Euclid Ave and Kingshighway, St Louis	Continuation Courses for General Practitioners	Arranged	Arranged
Columbia University Faculty of Medicine, 630 W 168th St, New York	Internal *Medicine*	April 1 June 29, 1946, 2 months	per month 50
University of Rochester School of Medicine, 260 Crittenden Blvd, Rochester, N Y	Postgraduate Refresher *Course*	*April 1, 1946, 6 weeks*	$ [illegible]3
Syracuse University College of Medicine, 766 Irving Ave, Syracuse, N Y	Refresher Course in General *Medicine*	Arranged	*Not stated*
University of Cincinnati College of Medicine, Eden and Bethesda Aves, Cincinnati	Refresher Course in Medicine	Tentatively set for July 15 *Sept 15, 1946*	Not stated
University of Oregon *Medical School, Marquam Hill, Portland*, Ore	*General Refresher Course*	April 1 June 29, 1946, 12 weeks	7[illegible]
University of Tennessee College of Medicine, 874 Union Ave, Memphis, Tenn	Refresher Course in Medicine	Beginning of any month	120
Vanderbilt University School of Medicine, 21 Avenue South at Edgehill, Nashville, Tenn	Medicine	*1 to 3 months from April to October, 1946*	*[illegible] months 100 00*
University of *Vermont College of Medicine, Pearl St*, College Park, Burlington, Vt	Course for General Practice Course in Internal Medicine	Arranged, 12 weeks Minimum 4 weeks, *arranged*	Not stated Not stated
	NEUROLOGY AND PSYCHIATRY		
Tulane University School of Medicine, 1430 Tulane Ave, New Orleans	Nervous System Diseases	April 15 20, 1946	Not stated
New York University College of Medicine, 477 First Ave, New York	Full Time Refresher Course in Neurology and Psychiatry	September 17, 1946, 8 weeks	2[illegible]0
Columbia University Faculty of Medicine, 630 W 168th St New York	Neurology and Psychiatry	*2 to 6 months* 1st day of any month	per month 5[illegible]

Institution	Title of Course	Schedule of Course	Registration Fee and/or Tuition
OBSTETRICS AND GYNECOLOGY			
Louisiana State University School of Medicine 1542 Tulane Ave, New Orleans	Obstetrics	May 1[illegible] June 1, 1946 [illegible] weeks	7
Tulane University School of Medicine, 1430 Tulane Ave, New Orleans	Obstetrics and Gynecology	May 13-18, 1946	Not stated
University of Maryland School of Medicine, Lombard and Greene Sts, Baltimore	Review of Obstetrics and Gynecology	Arranged, 12 weeks	1[illegible]0
	Review of Gynecology, Oncology and Female Urology	Arranged 10 weeks	1[illegible]
Tufts Medical School Postgraduate Division, 30 Bennet St, Boston At Providence Lying in Hospital	Obstetrics and Pediatrics	Arranged, 1 month	100
Columbia University Faculty of Medicine 630 W 168th St, New York	Obstetrics and Gynecology	1st day of any month 2 to 6 months	per month 5
OPHTHALMOLOGY			
The Children's Memorial Hospital, 707 Fullerton Ave, Chicago	PG Conference in Neuromuscular Anomalies of the Eye	Scheduled May 12-17, changed to May 5-10, 1946	50
Wayne University College of Medicine 1516 St Antoine St Detroit	Basic Ophthalmology	Begins April 8, 1946 Spring quarter	100
OTORHINOLARYNGOLOGY			
University of Illinois College of Medicine, 1853 W. Polk St, Chicago	Refresher Course in Otolaryngology for Specialists	May 13-18, 1946, 1 week	50
Columbia University Faculty of Medicine 630 W 168th St, New York	Otolaryngology	1st day of any month 2 to 6 months	per month 55
University of Oregon Medical School, Marquam Hill, Portland, Ore	Ophthalmology and Otolaryngology	April 15-20, 1946, 1 week	50
PATHOLOGY			
Tulane University School of Medicine, 1430 Tulane Ave., New Orleans	Gynecological and Obstetrical Pathology	May 20 June 1, 1946	Not stated
Wayne University College of Medicine, 1516 St Antoine St., Detroit	Pathology.	Begins April 8 1946 Spring quarter	Arranged
Columbia University Faculty of Medicine, 630 W 168th St, New York	Surgical Pathology	1st day of any month 2 to 6 months	per month 55
PEDIATRICS			
Michael Reese Hospital, 29th St and Ellis Ave, Chicago	Pediatrics	May 1-29, 1946	100
Harvard Medical School Courses for Graduates, 25 Shattuck St, Boston	Pediatrics	June 17-29, 1946	75
Columbia University Faculty of Medicine, 630 W 168th St, New York	Pediatrics	1st day of any month 2 to 6 months	per month 55
Vanderbilt University School of Medicine, 21 Avenue South at Edgehill, Nashville, Tenn	Pediatrics	1 to 3 months from April to October, 1946	3 months 166 66
PHARMACOLOGY			
Wayne University College of Medicine, 1516 St Antoine St, Detroit At Grace Hospital	Pharmacology	Begins April 8 1946 Spring quater	Arranged
PHYSIOLOGICAL CHEMISTRY			
Wayne University College of Medicine, 1516 St Antoine St, Detroit	Physiological Chemistry	Begins April 8 1946 Spring quarter	Arranged
PHYSIOLOGY			
Wayne University College of Medicine, 1516 St Antoine St, Detroit	Physiology	Begins April 8 1946 Spring quarter	Arranged
PROCTOLOGY			
Harvard Medical School Courses for Graduates, 25 Shattuck St Boston	Diseases of the Colon and Rectum	April 1-20, 1946	60
Wayne University College of Medicine, 1516 St Antoine St, Detroit At Receiving Hospital	Proctology	April 7, 1946, 4 weeks	[illegible]0
PUBLIC HEALTH			
Johns Hopkins University School of Hygiene and Public Health, 615 N Wolfe, Baltimore	Public Health	Oct 1, 1946, 8 months	Not stated
Vanderbilt University School of Medicine, 21 Avenue South at Edgehill, Nashville, Tenn	Public Health and Preventive Medicine	1 to 3 months from April to October, 1946	3 months 166 66
RADIOLOGY			
Vanderbilt University School of Medicine 21 Avenue South at Edgehill, Nashville, Tenn	X Ray	1 to 3 months from April to October, 1946	months 166 66
SURGERY			
Louisiana State University School of Medicine, 1542 Tulane Ave, New Orleans	General Surgery	April 22 May 11, 1946	75
Tulane University School of Medicine, 1430 Tulane Ave, New Orleans	Traumatology	May 20-25, 1946	Not stated
University of Maryland School of Medicine, Lombard and Greene Sts, Baltimore	Surgical Anatomy	Arranged, 15, weeks	150
The Lahey Clinic 605 Commonwealth Ave Boston	Postgraduate Course in Surgery	May 14-16, 1946	25 Free to Members of Armed Forces
Tufts Medical School Postgraduate Division 30 Bennet St Boston At Pratt Diagnostic Hospital	Surgery	Arranged, 1 month	[illegible]
Wayne University College of Medicine, 1516 St Antoine St, Detroit	Seminar in Surgery	Begins April 8, 1946 Spring quarter	10
Vanderbilt University School of Medicine, 21 Avenue South at Edgehill Nashville Tenn	Surgery	1 to [illegible] months from April to October, 1946	[illegible] months 166 66
University of Vermont College of Medicine Pearl St, College Park, Burlington Vt	Course in Surgery	Arranged, minimum 4 weeks	Not stated
UROLOGY			
Tulane University School of Medicine 1430 Tulane Ave New Orleans	Urinary Diseases	April 8-1[illegible], 1946	Not stated
Columbia University Faculty of Medicine 630 W 168th St, New York	Urology	1st of any month 2 to 6 months	per month [illegible]

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Hospitals for Profit: Hospital Liable for Burns Caused by Patient Spilling Hot Water on Herself.—The plaintiff sued for injuries alleged to have resulted from the negligence of certain employees of the defendant hospital during the time she was a patient therein. The jury found for the plaintiff, but the trial court entered judgment for the defendant notwithstanding such verdict. From such judgment the plaintiff appealed to the Supreme Court of California.

It appeared from the evidence that the plaintiff, a woman about 60 years old, on recommendation of her physician entered the defendant hospital to have her uterus removed. The operation, which took about two hours and severely taxed the plaintiff's strength, was performed on a Saturday morning. At noon on Monday a nurse took a pot of hot water, a cup and saucer, a spoon and a tea bag into the plaintiff's room and placed them on a low table beside the bed. The plaintiff was drowsy and suffering from pain, had a tube through her nose into her stomach and had not yet recovered from the effects of $\frac{1}{6}$ grain of morphine administered about 2:50 that morning and $\frac{1}{3}$ grain of pantopon, an opium derivative, administered about 10 that morning. She said she recalled seeing some one in the room and that the person said something, but she didn't know what was said and made no reply that she remembered. A few minutes later she felt a terrific heat on her arm and chest. She screamed and nurses came in and found she had been burned. The head nurse applied some salve and bandaged the area. The nurse who took the tray into the room testified that she had not advised the plaintiff that the water was hot but had told her that she should have a nurse help her. No drinking tube was furnished. The plaintiff had had no oral nourishment since the operation except a cup of tea on the previous day.

The defendant first contended that there was no evidence of negligence on its part. It argued that the evidence furnished by doctors, nurses and the hospital chart all showed that the plaintiff was in good condition prior to the accident, that she was exceptionally alert mentally and that the drugs administered were for pain alone and would not cause mental sluggishness or drowsiness. The plaintiff's physician testified, however, that morphine usually does produce some drowsiness, more in some persons than in others, and that a person would continue to feel the effects of the drugs administered to plaintiff for about four hours. A private hospital, said the Supreme Court, owes its patients the duty of protection and must exercise such reasonable care toward a patient as his condition may require. A hospital is liable for want of ordinary care, whether from incompetency of a nurse or failure in duty by a fully qualified nurse. The duty of care extends to safeguarding the patient from self-inflicted injuries due to mental incapacity, but no one is required to guard against, or take measures to avert, that which a reasonable person under the circumstances would not anticipate as likely to happen. In the light of that standard, said the court, there was sufficient evidence from which the jury could have found that the defendant had been negligent. It could have found that the plaintiff was far from alert mentally—that her comprehension, awareness and ability to function were subnormal. It could also have found that the hospital should have been aware of that condition, since it assumed the duty of properly caring for its patients and of taking appropriate precautions. In her weakened condition and confused state of mind, said the court, it was not at all improbable that the plaintiff in one manner or another would spill the hot water on herself. She may have assumed, as a person of ordinary prudence, in a half-conscious fashion, that it was safe to attempt to consume the tea, not realizing the danger incident thereto or the extent of her weakness. According to the defendant's evidence the plaintiff had had no oral nourishment since the operation except tea on the day previous. The jury could have inferred that she would thus have a craving for the tea and might underestimate her strength and ability to handle the hot water. The defendant was under a duty to observe and know the condition of its patients. The court therefore concluded that the evidence warranted the jury in finding for the plaintiff and that there was no contributory negligence on her part.

The defendant also contended that if any one was liable it was the plaintiff's physician who gave the order that the plaintiff be served tea, knowing the customary manner in which it would be, and was, served. If the duty of care resting on the hospital embraced the serving of the tea, said the Supreme Court, it cannot escape responsibility for the performance of that duty by attempting to shift it to the doctor. Even if the doctor ordered the tea to be served in the customary manner, and that manner was negligent, the defendant would be liable in following such instruction where a duty of care toward the patient rested on it. The defendant was bound to supply proper attendance and care to plaintiff, and that duty extended to furnishing nourishment. It cannot be said that, because the doctor ordered tea to be served plaintiff, he was making the server of the tea his servant and employee to the exclusion of the defendant hospital as the employer. The hospital still had direction and control over its employees and was responsible for the care to be observed by them. Accordingly the judgment for the defendant was reversed and the trial court ordered to enter judgment for the plaintiff on the verdict.—*Rice v. California Lutheran Hospital et al., 163 P. (2d) 860 (Calif., 1945).*

Medical Practice Acts: Unlawful Sale of Morphine Sulfate Held to Be Felony Justifying Revocation of License to Practice Medicine.—This is an action to review a determination of the Board of Regents of the University of the State of New York which revoked petitioner's license to practice medicine because of conviction of a felony. From an order confirming the revocation he appealed to the Supreme Court, appellate division, third department, New York.

Petitioner pleaded guilty in the United States district court to the crime of "unlawful sales of morphine sulfate," a violation of the Harrison narcotic act. There were two counts to the indictment, he was sentenced to one year and one day on each count, sentence was suspended and he was placed on probation for two years. Shortly thereafter the State Department of Education advised him that his license to practice medicine was subject to revocation because the offense to which he pleaded guilty was a felony. Petitioner contended that the offense was a misdemeanor, not a felony, and be petitioned the district court to amend the judgment of conviction to specify the exact unlawful acts. The petition was granted and the following statement was attached to the judgment:

> The sales charged in the indictment in counts 1 & 2 consisted of the following as a matter of fact: that on two different occasions defendant, a licensed physician, did, for a consideration, issue an order or prescription for morphine sulfate not in the regular course of his practice but to an addict for a prohibited use, although the prescription was filled by a druggist who acted in good faith without knowledge that the prescription was unlawfully used.

The designation of the offense as "unlawful sale of morphine sulfate" was not changed. Respondent still insisted that the petitioner was guilty of a felony and the order of revocation followed.

Section 1264 of the Education Law provides:

> 1. Whenever any practitioner of medicine shall be convicted of a felony . . . the registration of the person so convicted may be annulled and his license revoked by the department. . . .

Section 1251 provides:

> . . . The conviction of felony shall be the conviction of any offense which if committed within the state of New York could constitute a felony under the laws thereof. . . .

Section 1751 of the Penal Law provides:

> . . . who shall peddle, sell, barter or exchange any narcotic drug, as defined in section four hundred twenty-one of the public health law, in violation of article twenty-two of such law, shall be guilty of a felony. . . .

The court said that the offense to which the petitioner pleaded guilty was a felony under the laws of the national and state governments. Petitioner's crime was completed when he unlawfully issued the prescription. The issuance of the prescription, concluded the court, constitutes a sale within the meaning of the statutes. Accordingly the determination of the Board of Regents was affirmed.—*Tonis v. Board of Regents of University of State of New York, 58 N. Y. S. (2d) 766 (N. Y., 1945).*

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them

Titles marked with an asterisk (*) are abstracted below.

American Journal of Physiology, Baltimore

145:1-122 (Nov.) 1945

Effect of cH on Humoral Stimulation of Striated Muscle and Its Application to Chemical Control of Breathing. J. C. Finerty and R Gesell —p. 1.

Beneficial Effects of Yeast on Cardiac Failure of Hyperthyroid Rats B H Ershoff and D. Hershberg —p. 16.

Growth and Hemoglobin Production in Dogs on Purified Rations. W. R. Ruegamer, L. Michaud, C. A. Elvehjem and E. B. Hart —p. 23.

Gonadotropic Activity of Equine Gonadotropin in Combination with Zinc J. H. Leathem.—p 28

Liver Water and Electrolytes in Hemorrhagic Shock. D. C. Darrow and F. L. Engel —p. 32.

Production of Arterial Hypertension by Chronic Renal Artery Nerve Stimulation. F. J. Kottke, W. G. Kubicek and M. B Visscher.—p. 38

Functional Changes in Nerve and Muscle After Partial Denervation. H. M. Hines, W. H. Wehrmacher and J D. Thomson —p 48.

Blood Regeneration in Rats Deficient in Biotin, Thiamine or Riboflavin. A. Kornberg, H. Tabor and W. H Sebrell —p. 54.

Effect of Calcium Concentration on Prothrombin Time. L. B. Jaques and A. P. Dunlop.—p. 67.

Effect of Thiouracil on Respiration of Bone Marrow and Leukocytes in Vitro. C. O. Warren.—p. 71.

Distribution of Phosphorus Compounds in Gastrocnemius Muscle as Influenced by Aging Process S. M. Horvath —p. 77.

Biologic Energy Transformations During Shock as Shown by Blood Chemistry. W. H. McShan, V. R Potter, A. Goldman, E G. Shipley and R K. Meyer.—p. 93.

Comparison of Nutritive Values of Dextrose and Corn Syrups and of Effects Produced on Their Utilization by Thiamine. C. P. Richter. —p. 107.

Note on Effect of Caffeine on Ammonia and Urea Excretion in Rabbits F. Bernheim and Mary L C. Bernheim.—p. 115.

Effect of Various Steroid Hormones on "Alkaline" and "Acid" Phosphatases of Kidney of Mouse. C. D. Kochakian —p. 118.

American Review of Tuberculosis, New York

52:449-564 (Dec.) 1945

*Silicosis: Clinical Study H. Dayman.—p. 449.

Poncet's Disease: Clinical Observations on Inflammatory and Degenerative Joint Reactions in Tuberculosis. F. Seligson —p. 463.

Treatment of Pulmonary Tuberculosis with Diasone K B. Olson, J. F. Thompson and C. J. Zintheo Jr.—p. 474.

*Strict Bed Rest in Pulmonary Tuberculosis: Appraisal. H. A. Bray. —p 483.

Tuberculosis in Tropical Naval Hospital. E. Bogen and G H Strickland —p 490.

End Results of Artificial Pneumothorax: Review of 140 Cases Two Years After Reexpansion. I. V. Allen and C. W Kelly —p. 495.

Suction Cabinet for Use in Cavity Aspiration (Monaldi). W. Woodruff. —p 502

Anatomic Studies on Human Tuberculosis. XX. Disseminated Calcified Small Nodular Hematogenous Pulmonary Tubercles Incidentally Discovered. K Terplan —p. 505.

Comparison of Tuberculin Patch Test and Collodion Tuberculin Test P Singer, J. J. Sottilaro and H. Vollmer —p. 521

Modified Tuberculin Patch Test T. C. Grubb —p 526

Clorox Digestion: Comparison of Clorox Digestion and Three Other Methods for Finding Acid Fast Organisms in Sputum. G. M. Cameron and Ruth Castles —p. 530

Medicine as Practiced During 1840's: Comparison. W. D. Postell —p 534.

Silicosis.—Dayman reports observations on 116 patients with silicosis, 33 of whom came to necropsy. Thirty of the 116 patients who did not present evidence of clinical tuberculosis are divided into two groups: those with simple nodular silicosis (15 cases) and those with simple conglomerate silicosis (15 cases). The majority of the 15 patients with simple nodular silicosis were free of symptoms A few noted slight dyspnea on exercise The diagnosis was established solely on a history of prolonged exposure to silica dust and the minute, widely distributed shadows in the roentgenogram The patients with simple conglomerate silicosis exhibited symptoms and signs of pulmonary emphysema. Dyspnea was often the sole outstanding complaint. In 7 of the 15 cases massive shadows were situated symmetrically in either lung field at the hilar level, while in 8 cases the principal shadows were somewhat smaller, more numerous and irregularly distributed. In 12 there were additional minute disseminated shadows compatible with silicotic nodulation. In 77 of the 116 patients with silicosis, complicating tuberculosis existed. The symptoms were predominantly those of the tuberculous disease. The constitutional reaction is not so pronounced when tuberculosis complicates silicosis as when tuberculosis alone is present. The chest roentgenogram presented widespread minute shadows similar to those observed in simple nodular silicosis together with larger mottled shadows, the latter usually being due to the intimately combined lesions of silicosis and tuberculosis. The presence of silicosis evidently predisposes the patient to progressive tuberculosis. Sixty-six of the 77 died.

Bed Rest in Pulmonary Tuberculosis.—Bray believes that rest in bed is essential in the treatment of pulmonary tuberculosis when manifest symptoms are present. The published results achieved by strict bed rest are few in number and not convincing. A series of 67 ambulant patients was observed who presented an "early" lesion. In this series of 67 ambulant patients the results were favorable in 57 instances, questionable in 2 and unfavorable in the remaining 8. The results are comparable to those obtained by the use of strict bed rest. An additional study was made of 360 patients with incipient tuberculous disease admitted to Ray Brook during the years 1939 to 1942 inclusive; 97 patients in this group had received four months of strict bed rest before coming to Ray Brook. The remaining 263 were ambulant previous to and during their residence at the sanatorium except in a relatively few instances in which an exacerbation of the disease occurred subsequent to their admission. The results of treatment in these two groups of patients who received approximately the same period of treatment at Ray Brook were for all practical purposes identical, indicating that the initial months of treatment by strict bed rest did not appreciably alter the course of the disease.

Anesthesiology, New York

6:561-672 (Nov.) 1945

*Comparison of Amphetamine Sulfate with Other Stimulants of Central Nervous System in Morphine Respiratory Depression. C. A. Handley and D. L Ensberg —p. 561.

*Hypobaric Pontocaine: New Technic in Spinal Anesthesia. P. C. Lund and J. D Cameron —p 565.

Utility of Apomorphine in Clinical Anesthesia. E. A. Rovenstine and S G. Hershey.—p. 574.

Anesthesia in Maxillofacial Surgical Unit with British Liberation Army. H. L. Thornton and S. Rowbotham —p 580

Ether Air Anesthesia: Technic. M. Saklad, Priscilla Sellman and E. Saklad —p. 597.

Bilateral Paralysis of Abducens and Hypoglossal Nerves Following Spinal Anesthesia: Case Report. J. L. Milowsky and R. R. Betancourt.—p. 600.

Acetaldehyde, a Volatile Anesthetic and Sympathetic Stimulant. T. Koppanyi —p. 603.

Regional Nerve Block Anesthesia. J. R. Bone —p 612.

Amphetamine Sulfate for Respiratory Depression Caused by Morphine.—Handley and Ensberg compare the effectiveness of amphetamine with ephedrine, metrazol, caffeine and nikethamide. Their studies on 14 human subjects indicate that amphetamine sulfate is the most effective drug of the five stimulants studied in antagonizing morphine respiratory depression. Amphetamine is also more prompt in acting than the other four agents. The average percentage increases in minute volume above depressed levels were amphetamine 102, nikethamide 37, ephedrine 30, metrazol 21 and caffeine 17.

Hypobaric Pontocaine in Spinal Anesthesia.—Lund and Cameron point out that hypobaric solution of pontocaine has several disadvantages, chief among them being that the head and/or shoulders must be elevated at least fifteen to twenty minutes until the drug is fixed by the nerve tissues. They describe a technic which they have developed using hypobaric pontocaine in a 0.1 per cent solution. As it has a specific gravity of 1 001, while that of nupercaine is 1 003 and that of the spinal fluid approximately 1 007, the solution is readily controlled by gravity and the low concentration should add a wide margin of safety. Hypobaric pontocaine can be used to advantage in all cases suitable for spinal anesthesia which require under two to two and one-half hours of operating time. There were no severe postoperative sequelae in 175 cases. The advantages of the method include the ability to maintain the Trendelenburg or lateral Trendelenburg position throughout and thus aid in the prevention of shock and cerebral anoxia. The smaller dosage insures minimal interference with vital processes, favors minimum depression, accounts for decreased postoperative discomfort and sequelae and decreases the incidence of reactions and toxicity. The onset of anesthesia is probably more rapid than with other spinal anesthetic agents.

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Surgical Care of Operable Malignant Lesions of Stomach C. J. Hunt and P. F Hunt —p 21.

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233:747-798 (Dec. 20) 1945

*Penicillin Aerosolization in Treatment of Serious Respiratory Infections Preliminary Report. M. S. Segal and Claire MacIntyre Ryder. —p 747.

Clinical and Laboratory Studies of 91 Workers with Apical Systolic Murmurs I. N. Wolfson.—p 757.

Serologic Types of Hemolytic Streptococci in Scarlet Fever in Massachusetts G E Foley, W. L Aycock and R D Cox —p 761.

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Acute Hemorrhagic Interstitial Pneumonia —p 789.

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Penicillin Aerosolization in Serious Respiratory Infections.—This report by Segal and Ryder is a preliminary study of the use of aerosolized penicillin solutions in the treatment of patients with pneumonia, bronchiectasis, lung abscess and infective bronchial asthma. Twenty-one patients were treated. The clinical course of 6 patients with infective bronchial asthma was not altered, although the penicillin susceptible organisms were eradicated. Clinical cures were obtained in 5 patients with pneumococcic pneumonia and in 1 patient with an acute pulmonary infarction and pneumonitis. Penicillin blood levels of 0 028 to 0.055 Oxford unit per cubic centimeter were obtained in 5 patients. Five patients with bronchiectasis were successfully treated, 2 patients before lobectomy and the other 3 entirely medically. Such therapy is believed to be more helpful than sulfonamides or penicillin parenterally in bronchiectasis. Four patients with lung abscess were treated with penicillin aerosol. One of them, with a fulminating putrid lung abscess, died on the fifth hospital day following operation. Another, with a chronic putrid lung abscess, was adequately prepared for lobectomy. The third patient, with a large, nonodoriferous, aerobic type of lung abscess, with a fluid level, was entirely cured after six weeks of therapy. The fourth patient, with multiple lung infarcts and a lung abscess, improved slowly but completely. Penicillin aerosolization has a definite value in the treatment of patients with serious respiratory disease.

Northwest Medicine, Seattle

44:299-414 (Dec.) 1945

*Toxoplasmic Encephalitis. Clinical Findings in 2 Patients From Pacific Northwest. R S Dow —p. 382.

Melanoma of Small Intestine B N. Wade —p. 388.

Typhus Fever. C E Littlehales —p 390.

Necessary Cooperation of All Physicians. W. D. Read.—p 392.

Present and Future Prepayment Plans C. A. Veasey Jr —p 394

Medical Service Bureau an Answer to Socialized Medicine J. P. Neal —p 297.

Toxoplasmic Encephalitis.—Dow presents the histories of 2 patients with toxoplasmic encephalitis. The first was a child aged 2 who exhibited all the clinical manifestations of toxoplasmic encephalitis, including (1) healed or inactive chorioretinitis, (2) reduced vision, (3) strabismus nystagmus and microphthalmos, (4) intracerebral calcification, (5) one convulsive seizure, (6) internal hydrocephalus from a block at the aqueduct of Sylvius, (7) retarded speech development and (8) mental deficiency. The case was complicated by the presence of a postoperative Staphylococcus aureus meningitis and wound infection. The serologic tests for toxoplasma had not been done, and attempts to infect laboratory animals with spinal fluid were unsuccessful. The second patient, a girl aged 5, exhibited many of the signs and symptoms of toxoplasmic encephalitis. Treatment with sulfapyridine was tried and continued for ten days, maintaining a blood level of 5 to 10 mg. per cent. She seemed much improved for three weeks, but then seizures recurred. This observation and the results obtained in laboratory animals make it desirable to continue the use of sulfonamides whenever a diagnosis of toxoplasmic encephalitis is made and when there trolled by gravity and the low concentration should add a wide margin of safety. Hypobaric pontocaine can be used to advantage in all cases suitable for spinal anesthesia which require under two to two and one-half hours of operating time. There were no severe postoperative sequelae in 175 cases. The advantages of the method include the ability to maintain the Trendelenburg or lateral Trendelenburg position throughout and thus aid in the prevention of shock and cerebral anoxia. The smaller dosage insures minimal interference with vital processes, favors minimum depression, accounts for decreased postoperative discomfort and sequelae and decreases the incidence of reactions and toxicity. The onset of anesthesia is probably more rapid than with other spinal anesthetic agents.

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General Program of Industrial Hygiene Services in Missouri. A. L Koven and W. S Johnson —p 784

Industrial Health Activities in St Louis as Carried on and Promoted by Industrial Hygiene Service, Health Division, Department of Public Welfare R M. Brown —p 788

Medical Problems of Veterans Administration P. R Hawley —p 792

43:1-76 (Jan.) 1946

Surgical Care of Operable Malignant Lesions of Stomach C. J. Hunt and P. F Hunt —p 21.

Chemotherapeutic and Surgical Treatment of Acute Osteomyelitis J A Key —p 23

New England Journal of Medicine, Boston

233:711-746 (Dec. 13) 1945

Occupational Dermatoses. Disability and Compensation. C. G. Lane —p 711.

Development of Anatomic Laws in States of New England F. C Waite.—p. 716.

Infectious Mononucleosis J Milne —p 727.

Hemoglobinemia and Hemoglobinurias J F. Ross —p 732.

Stone at Bifurcation of Common Hepatic Duct —p 738.

Tuberculosis of Tongue, Epiglottis, Larynx, Lungs, Testes, Epididymides, Prostate, Bladder and Left Kidney.—p 740.

233:747-798 (Dec. 20) 1945

*Penicillin Aerosolization in Treatment of Serious Respiratory Infections Preliminary Report. M. S Segal and Claire MacIntyre Ryder. —p. 747.

Clinical and Laboratory Studies of 91 Workers with Apical Systolic Murmurs I N. Wolfson —p. 757.

Serologic Types of Hemolytic Streptococci in Scarlet Fever in Massachusetts G E Foley, W. L. Aycock and R. D. Cox —p. 761.

Hemoglobinemia and Hemoglobinurias. J F. Ross —p 766

Acute Hemorrhagic Interstitial Pneumonia —p. 789.

Glioblastoma Multiforme of Medulla —p 792

Penicillin Aerosolization in Serious Respiratory Infections.—This report by Segal and Ryder is a preliminary study of the use of aerosolized penicillin solutions in the treatment of patients with pneumonia, bronchiectasis, lung abscess and infective bronchial asthma. Twenty-one patients were treated. The clinical course of 6 patients with infective bronchial asthma was not altered, although the penicillin susceptible organisms were eradicated. Clinical cures were obtained in 5 patients with pneumococcic pneumonia and in 1 patient with an acute pulmonary infarction and pneumonitis. Penicillin blood levels of 0 028 to 0.055 Oxford unit per cubic centimeter were obtained in 5 patients Five patients with bronchiectasis were successfully treated, 2 patients before lobectomy and the other 3 entirely medically. Such therapy is believed to be more helpful than sulfonamides or penicillin parenterally in bronchiectasis. Four patients with lung abscess were treated with penicillin aerosol. One of them, with a fulminating putrid lung abscess, died on the fifth hospital day following operation. Another, with a chronic putrid lung abscess, was adequately prepared for lobectomy. The third patient, with a large, nonodoriferous, aerobic type of lung abscess, with a fluid level, was entirely cured after six weeks of therapy. The fourth patient, with multiple lung infarcts and a lung abscess, improved slowly but completely. Penicillin aerosolization has a definite value in the treatment of patients with serious respiratory disease.

Northwest Medicine, Seattle

44:299-414 (Dec.) 1945

*Toxoplasmic Encephalitis Clinical Findings in 2 Patients From Pacific Northwest. R S. Dow.—p 382

Melanoma of Small Intestine B. N. Wade.—p. 388.

Typhus Fever. C E Littlehales —p. 390

Necessary Cooperation of All Physicians W. D. Read —p 392.

Present and Future Prepayment Plans C. A. Veasey Jr.—p 394

Medical Service Bureau an Answer to Socialized Medicine. J. P. Neal —p 297.

Toxoplasmic Encephalitis.—Dow presents the histories of 2 patients with toxoplasmic encephalitis The first was a child aged 2 who exhibited all the clinical manifestations of toxoplasmic encephalitis, including (1) healed or inactive chorioretinitis, (2) reduced vision, (3) strabismus nystagmus and microphthalmos, (4) intracerebral calcification, (5) one convulsive seizure, (6) internal hydrocephalus from a block at the aqueduct of Sylvius, (7) retarded speech development and (8) mental deficiency. The case was complicated by the presence of a postoperative Staphylococcus aureus meningitis and wound infection. The serologic tests for toxoplasma had not been done, and attempts to infect laboratory animals with spinal fluid were unsuccessful. The second patient, a girl aged 5, exhibited many of the signs and symptoms of toxoplasmic encephalitis. Treatment with sulfapyridine was tried and continued for ten days, maintaining a blood level of 5 to 10 mg. per cent. She seemed much improved for three weeks, but then seizures recurred. This observation and the results obtained in laboratory animals make it desirable to continue the use of sulfonamides whenever a diagnosis of toxoplasmic encephalitis is made and when there has not been extensive permanent cerebral damage. It is felt that the condition is more common than the reported cases would indicate and that a greater incidence will be found when knowledge of this disorder has become more generally available.

Public Health Reports, Washington, D. C.

60:1519-1550 (Dec. 21) 1945

Legislation on Hospital Surveys, Construction and Licensing Considered by State Legislatures in 1945. Mary M. Guerin.—p. 1519.

60:1551-1582 (Dec. 28) 1945

Notes on Compulsory Sickness Insurance Legislation in the States, 1939-1944. Adela Stucke.—p. 1551.

61:1-36 (Jan. 4) 1946

A Cycle of Morphine Addiction: Biologic and Psychologic Studies: Part I. Biologic Investigations. E. G. Williams and F. W. Oberst. —p. 1.

61:37-68 (Jan. 11) 1946

A Cycle of Morphine Addiction: Biologic and Psychologic Studies: Part II. Psychologic Investigations. R. R. Brown.—p. 37.
Release of Antigen from Certain Bacteria on Treatment with Ether. C. C. Shepard.—p. 54.

Quarterly J. of Studies on Alcohol, New Haven, Conn.

6:271-414 (Dec.) 1945

*Treatment of Experimental Liver Cirrhosis. J. V. Lowry, L. L. Ashburn and W. H. Sebrell Jr.—p. 271.
Alcohol as Preventive of Experimental Neuroses. J. H. Masserman and Mary G. Jacques, with assistance of Mary R. Nicholson.—p. 281.
Case Histories of Compulsive Drinkers. H. Wortis and L. R. Sillman. —p. 300.
Alcohol Problem and the Law: III: Beginnings of Alcoholic Beverage Control Laws in America. E. G. Baird.—p. 334.

Treatment of Experimental Liver Cirrhosis.—Lowry and his associates maintained rats on a cirrhosis producing diet for sixty-three to eighty-four days, and the status of the liver of each rat was determined at that time by biopsy. The rats were then treated by the daily administration of large amounts of choline chloride or by using a diet containing large amounts of casein. The gross and microscopic appearance of the liver after treatment was compared with the biopsy findings. During the period of treatment a striking improvement in the gross and microscopic appearance of the liver occurred. Although therapy did not have a recognizable effect on the fibrous tissue present, it apparently prevented further progression of the cirrhotic process and produced improvement in the microscopic appearance of the parenchyma.

Radiology, Syracuse, N. Y.

45:599-664 (Dec.) 1945

Teaching of Radiology. F. J. Hodges.—p. 559.
Clinical Significance of Deformity of Cecum in Amebiasis. R. Golden and P. Ducharme.—p. 565.
Roentgen Findings in Amebic Disease of Liver. F. Isaac.—p. 581.
Evaluation of Automatic Exposure Control Equipment in Photofluorography. R. H. Morgan and P. C. Hodges.—p. 588.
Unusual Case of Ewing's Sarcoma. P. C. Swenson and J. G. Teplick. —p. 594.
Roentgenologic Visualization of Fractured Temporal Styloid Process. S. E. Sinberg and M. S. Burman.—p. 599.
Lipiodol Intravasation During Uterosalpingography with Pulmonary Complications. D. Eisen and J. Goldstein.—p. 603.
Bone Rarefaction After Skull Injuries. J. Arendt.—p. 608.

Lipiodol Intravasation During Uterosalpingography.—Eisen and Goldstein recommend certain measures which prevent intravasation or limit its extent. Injection for uterosalpingography should not be done earlier than six to eight days or later than ten days after completion of menstruation. The optimum period would seem to be eight to ten days after the menstrual period. It should not be performed in less than ten days after any operation on the uterus, in order to permit complete healing. The position of the uterus should be determined by the use of a sound. When the cannula is inserted it should be held, if necessary, at an angle that is calculated to make it parallel to the cervical canal, so that the tip of the cannula is not likely to be in contact with the endometrium. Williams recommends that the injection be done under fluoroscopic control both for ascertaining the position of the uterus and for early recognition of any intravasation. It is best to keep the pressure as low as is commensurate with proper filling of the uterus. A top pressure of 180 to 200 mm. of mercury is safe and satisfactory in practically all cases. The amount of lipiodol injected should be no more than is necessary to fill the uterus and tubes, with a slight spill. A satisfactory plan is to inject 4 to 6 cc. and maintain pressure while the film is taken and developed. If more lipiodol is required, it can be injected subsequently.

United States Naval Med. Bulletin, Washington, D. C.

45:1029-1238 (Dec.) 1945

*Louse Borne Relapsing Fever in Tunisia. F. G. Greaves, H. M. Gezon and W. F. Alston.—p. 1029.
Report on Cholera Studies in Calcutta: Value of Chemotherapy in Treatment of Cholera and Use of Blood Plasma in Cholera Collapse. Epidemiology Unit No. 50.—p. 1049.
Cardiovascular Disturbances in Tsutsugamushi Disease. M. Sokolow and L. H. Garland.—p. 1054.
Transportation of Japanese Prisoners of War: The Medical Department of an Attack Transport.—p. 1069.
Management of Injuries of Major Blood Vessels. G. Crile Jr.—p. 1076.
Perinephric Abscess: Report of 3 Cases Simulating Acute Appendicitis. J. B. Butts and M. E. Conley.—p. 1081.
Recurrent Indirect Hernia. L. L. Bean.—p. 1088.
Intrabronchial Instillation of Penicillin or Sulfonamide Solutions, with Bronchial Lavage, in Treatment of Severe Bronchiectasis. F. H. Moore and J. W. Thompson.—p. 1097.
Anaphylactoid (Sanarelli-Shwartzman) Reaction Following Therapeutic Antityphoid Injections, with Report of Fatal Case. J. Love and R. H. Driscoll.—p. 1104.
Roentgen Diagnosis of Deformities of Cardiac End of Stomach: Intrinsic and Extrinsic in Origin. M. H. Poppell and J. F. Roach.—p. 1111.
Occurrence of Psychoneurotic Symptoms on Various Services of Naval Hospital. N. Warner and Margaret W. Gallico.—p. 1119.
Disciplinary Problems Among Men with Combat Fatigue. J. D. Teicher. —p. 1125.
Bacteriology of War Wounds in Pacific Area. H. B. Neel and J. P. Cole.—p. 1127.
Endocrinologic Aspects of Recruiting. C. C. Kress.—p. 1131.
Prothrombin Liver Function Test. H. K. Russell.—p. 1140.

Louse Borne Relapsing Fever in Tunisia.—Greaves and his associates observed 40 patients in a special ward at the French Naval Hospital in Ferryville and considered partial data on an additional 80 cases in the village of El Haouid, 71 in the village of Hadjerine and 3,806 in the city of Tunis. They conclude that: 1. Penicillin is as effective as neoarsphenamine in the treatment of relapsing fever. It is more expensive and requires more work to administer than the arsenical, so that in the average case it offers little advantage. 2. Penicillin is probably the drug of choice in relapsing fever accompanied by jaundice. 3. The use of white mice or adult guinea pigs in experimentation on Spirocheta berbera, obtained directly from human blood, is not feasible. 4. One application of 10 per cent DDT powder, if thoroughly applied to a population, is nearly 100 per cent effective in stopping a louse borne epidemic of relapsing fever.

Virginia Medical Monthly, Richmond

72:503-548 (Dec.) 1945

Crystalluria in Southwest Pacific. H. C. Jones, P. L. Flynn and J. E. Glassberg.—p. 503.
Some Observations on Pending Medical Legislation and Medical Trends W. A. Porter.—p. 507.
Nonmalignant, Segmental, Ulcerative Lesions of Bowel. C. M. Caravati. —p. 512.
Horace Wells and His Discovery of Anesthesia. A. M. Wash.—p. 516
Treatment of Crushing Injuries of Extremities. S. Leigh Jr.—p. 519.
Traumatic Subcapsular Hematoma of Spleen: Case Report. L. R. O'Brian Jr.—p. 522.

War Medicine, Chicago

8:209-282 (Oct.) 1945

Methods of Accelerating Dark Adaptation and Improving Night Vision. K. K. Kekcheev.—p. 209.
Syndrome of Oxygen Poisoning in Cats. I. Gersh.—p. 221.
Development of Psychiatry in Army in World War II. W. C. Menninger.—p. 229
Psychiatric Study of 100 Battle Veterans. J. G. Sheps and F. E Coburn.—p. 235.
Psychiatry Aboard a Hospital Ship During Attack on Pearl Harbor F. M. Harrison.—p. 238.
Psychiatric Disorders in Puerto Rican Troops. J. G. Kepecs.—p 244
Psychosis Following Administration of Quinacrine Hydrochloride for Malaria: Neuropsychiatric Study of a Case. J. C. Mergener.—p. 250
Delayed Combat Reactions in Air Force Personnel. C. W. Miller Jr —p. 253.
Measurement of Skin Resistance in Peripheral Nerve Injuries I. Hyman and W. F. Beswick.—p. 258.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Rheumatic Diseases, London

5:1-28 (Sept.) 1945

Nature of Fibrositis: I. Myalgic Lesion and Its Secondary Effects: Reflex Theory. M. Kelly.—p. 1.
Study of Rheumatism in Group of Soldiers with Reference to Incidence of Trigger Points and Fibrositic Nodules. L. G. C. E. Pugh and T. A. Christie.—p. 8.
Observations on Treatment of Rheumatic Fever with Vitamin P. J. F. Rinehart.—p. 11.
Benign Type of Rheumatic Fever. W. L. Ackerman.—p. 14.
Rheumatism in Sweden. W. S. C. Copeman.—p. 17.

British Journal of Surgery, Bristol

33:101-200 (Oct.) 1945

Pharyngeal Diverticula. J. Morley.—p. 101.
Acrylic Resin for Closure of Skull Defects: Preliminary Report. J. M. Small and M. P. Graham.—p. 106.
Surgical Treatment of Traumatic Aneurysms. M. Paul.—p. 113.
Observations on Carcinoma of Prostate Treated with Estrogens as Demonstrated by Serial Biopsies. J. D. Fergusson and W. Pagel.—p. 122.
Histologic Study of Predegenerated Nerve Autograft. R. Barnes, P. Bacsich and G. M. Wyburn.—p. 130.
Obstructive Diaphragmatic Hernia Resulting from Old Gunshot Wound of Chest: Report of 3 Cases. W. A. Mackey and D. L. C. Bingham. —p. 135.
Pelvic Ectopic Kidney. G. Forbes.—p. 139.
Torsion of Great Omentum: Report of 4 Cases. W. Etherington-Wilson. —p. 142.
*Physiologic Gastrectomy: Operation of Ligature of Arteries of Stomach to Relieve Hyperacidity and to Prevent Recurrent Ulceration After Gastroenterostomy. T. H. Somervell.—p. 146.
Thoracoabdominal Wounds in War. G. Blackburn and A. L. d'Abreu. —p. 152.
Principles in Early Reconstructive Surgery of Severe Thermal Burns of Hands. B. Smith, C. Cornell and C. L. Neill.—p. 155.
Aid in Postoperative Management of Temporary Ileal Fistula After Lahey Right Hemicolectomy. S. Levy.—p. 160.
Experiences with Transthoracic Esophagectomy and Gastrectomy. G. H. Steele.—p. 162.
Penicillin Treatment of Acute Hematogenous Osteomyelitis. I. W. J. McAdam.—p. 167.
Status of Hormonal Bioassay in Malignant Disease of Testicle: Review of Literature. R. S. Francis.—p. 173.
Chronic Hypertrophic Ileocecal Tuberculosis and Its Relation to Regional Ileitis (Crohn's Disease). A. W. Taylor.—p. 178.

Physiologic Gastrectomy.—Somervell ligated most of the arterial supply of the stomach in 400 cases of gastroenterostomy for duodenal ulcer. The usual effect was an immediate and considerable drop in gastric acidity. Only 1 of the 400 patients in whom ligation had been done returned with gastrojejunal ulcer, whereas 7 of 300 gastrectomy patients returned with recurrent ulceration. In cases in which the operation of arterial ligation alone has been done without gastroenterostomy the early and late results are similar to those in which gastroenterostomy was combined with arterial ligation. It is evident that the reduction of acidity is caused by ligation of the arteries and not by the gastrojejunostomy. The author concludes that gastrovascular ligation is the operation of choice in cases of duodenal ulcer with severe hyperacidity and that it can be combined easily with gastroenterostomy without raising the mortality of the operation.

Transactions Roy. Soc. Trop. Med. & Hyg., London

39:177-264 (Dec.) 1945

*Investigation into Efficacy of Sulfadiazine in Treatment of Malaria. R. V. Coxon and W. Hayes.—p. 207.
Anemia Associated with Sickle Cell Trait in British West African Natives. R. W. Evans.—p. 207.
Studies on Weltmann Reaction in Malaria Cases. J. Kleeberg.—p. 221.
Contribution to Study of Malnutrition in Central Africa: Syndrome of Malignant Malnutrition. H. C. Trowell and E. M. K. Muwazi. —p. 229.
Growth of Protozoa in Tissue Culture: I. Plasmodium Gallinaceum, Exoerythrocytic Forms. F. Hawking.—p. 245.
Rapid Method for Detecting Sickle Cell Trait. G. Robinson.—p. 264.

Sulfadiazine in Treatment of Malaria.—Coxon and Hayes treated 20 cases of malaria, including both fresh and relapsing cases of benign tertian, fresh and relapsing cases of malignant tertian, and 1 case of quartan malaria, with sulfadiazine alone. Ten untreated controls were used for comparison. An initial dose of 5 Gm. of sulfadiazine was employed in the majority of cases. This was followed by 1 Gm. every four hours. Patients treated with sulfadiazine had their blood cleared of parasites after an average period of twelve days from the onset of the attack and eight days after the initiation of treatment. All of the 10 untreated controls had circulating blood parasites after the same interval of time. The latest day on which a treated patient became parasite free was the seventeenth day of the disease. While all the treated men had parasite free films after seventeen days, the controls untreated for the same period had parasites present. The treated patients, except 1 with a heavy infection with malignant tertian malaria, were afebrile by the thirteenth day of the attack, while 6 of the 10 controls continued to show a high temperature after the same interval. Sulfadiazine thus exerts an antimalarial effect on the temperature and in clearing the peripheral blood of parasites, but its action is slower than that of quinine and atabrine in controlling an attack of malaria. Of the 20 men treated with sulfadiazine 15 relapsed within one month from the cessation of treatment. This fact alone rules out its usefulness in the routine treatment of malaria. In addition there is the tendency of the drug to produce renal complications. The gametocytes of Plasmodium falciparum appeared to be unaffected by the drug.

Nordisk Medicin, Gothenburg

11:2305-2356 (Aug. 9) 1941. Partial Index

Hospitalstidende

Indications for Splenectomy in Gaucher's Splenomegaly. E. Meulengracht.—p. 2309.
Remarks on So-Called Ischiopubic Osteochondritis. P. N. B. Eliasen. —p. 2312.

Norsk magasin for lægevidenskapen

*Electrocardiographic Changes in Cor Pulmonale. K. Smedsrud.—p. 2325.
Features of Pathology in Deforming Spondylosis. O. Torgersen.—p. 2333.

Electrocardiographic Changes in Cor Pulmonale.—Examination of the electrocardiograms with special regard to the characteristic changes of cor pulmonale in 46 cases of bronchial asthma selected at random disclosed signs of right coronary insufficiency in 15 cases, in 5 cases only during attacks. Grave symptoms, such as dilatation of the right half of the heart, dilated conus pulmonale, cyanosis or edema, were present in 6 of the 15 and in only 2 of the other cases. The QRS complexes were on the whole more typical of right preponderance during attacks than in the intervals free from attacks and were most typical in the 6 cases mentioned. The proportional figures were higher in cases of right coronary insufficiency than in the others, higher during attacks than in the free intervals, highest in the 6 cases named. For greatest help from electrocardiography in asthmatic patients systematic examinations should be made during attacks and the free intervals, accompanied by determination of the blood pressure.

Hygiea

*Determination of Serum Iron and Its Practical Significance. J. Waldenström.—p. 2341.

Determination of Serum Iron and Its Practical Significance.—Waldenström says that in iron deficiency anemia a persisting low serum iron level after normalization of the hemoglobin values indicates further treatment with iron. Normal serum iron excludes iron deficiency anemia. In iron deficiency without anemia (latent sideropenia) low serum iron reveals the nature of the condition. Such cases are common after gastric operations. In pernicious anemia with normal or nearly normal blood values after liver therapy a continued low serum iron points to need of iron therapy; it may also indicate a complication such as cancer of the stomach. In atypical cases of pernicious anemia the influence of liver therapy on the serum iron value supports the diagnosis; the sudden drop in the serum iron on liver therapy is one of the earliest and most specific signs of remission. In inoperable cancer of the stomach with cachexia, improvement may result from treatment with iron. The iron tolerance test may reveal cases which will lend themselves to the treatment.

Book Notices

A Textbook of Surgery. By American Authors. Edited by Frederick Christopher, B.S., M.D., F.A.C.S., Associate Professor of Surgery, Northwestern University Medical School, Chicago. Fourth edition. Cloth. Price, $10 Pp. 1,548, with 1,483 illustrations on 762 figures. Philadelphia & London: W. B. Saunders Company, 1945.

The caliber of the contributors to this textbook of surgery is without peer in the world today. In this revision the list of contributors has been increased, the text reset to a two column formation on each page and the content expanded. The selection of men actively engaged in teaching has suppressed to a considerable extent a tendency to enlarge the subject matter to a degree of technicality beyond the capacity of the student. There is little room to disagree with the opinions rendered in the book, because of the authority behind each contributor. The inclusion of a separate section on modern chemotherapy is valuable from several points of view. It reflects the proper importance of these recent advances in surgery, it will enhance the possibilities of prompt inclusion of future progress and it should eliminate more rapidly discarded technics. The section on military surgery is still of value in that many lessons learned from the war have not as yet been fully correlated with civilian application. No one desires any other future use for this subject, but its value to posterity is still a possibility.

The position which this work will occupy in medicine is still difficult to analyze. For the student it appears to be more valuable as a reference book, and yet its concise, terse and fundamental approach makes it valuable for primary teaching of surgery. For the intern, resident and general practitioner it may be more useful. For more advanced study a bibliography has been included at the end of each section which has invariably included recent references. If the hazard "to become all things to all men" can be avoided successfully, this book will continue to be an efficient instrument of instruction in surgery.

Cleft Palate and Speech. By Muriel E. Morley, B.Sc., F.C.S.T., Speech Therapist to the Royal Victoria Infirmary, Newcastle-upon-Tyne. Fabrikold. Price, 7s. 6d. Pp. 160, with 52 illustrations. Baltimore: William Wood & Company; Edinburgh: E. & S. Livingstone, 1945.

This handbook by the speech therapist to several prominent British hospitals gives a most comprehensive view of this still difficult surgical and therapeutic problem. The text is well arranged and illustrated by line drawings, colored plates and photographs.

An introductory chapter deals with the embryologic formation of the nose, lips, alveolar rim, hard and soft palate and superior maxilla and mandible. There follows a classification of the different types of cleft lip and palate based on the embryologic derangement which causes them. There is a well illustrated description of the anatomy of the hard and soft palate, including the attached muscles with their innervation and blood supply. Chapter three provides an interesting historical account of the major developments in the surgical technic of palate repair with descriptions of the Langenbeck, Dieffenbach and Ferguson methods of median suture, the Lane flap and the Brophy compression operation. In more detail are described the Passavant plastic procedures on the pharyngeal wall, Ganzer's forerunner of the push-back technic of Dorrance, and Gillies' use of prosthetic appliances in closing defects of the hard palate. Wardill's pharyngoplasty is considered in detail, and his four-flap operation is illustrated by colored plates. Dennis Brown's two stage procedure for narrowing the nasopharynx is clearly described. In consideration of all the surgical procedures there is stressed the extreme desirability of a narrowed nasopharynx, an elongated and united soft palate, the elimination of palatal tension and the avoidance of nasal and oral scar tissue.

Subsequent chapters describe the problem of feeding in cases of cleft palate, the mechanism of normal speech development and the abnormalities in speech which result from palatal deformities. These speech abnormalities are further considered in great detail, being subdivided first according to the preoperative speech defects and secondly to the anatomic defects which cause them.

The author next considers the technic of examination of the patient prior to speech training, with attention to age, palatal anatomy and competence of the palatopharyngeal sphincter. This is followed by a detailed analysis of the common postoperative speech defects. A chapter is devoted to the subject of speech treatment and the conditions affecting its success, such as the anatomic and physiologic results, the patient's intelligence, his hearing acuity, his speech "sense" and his age, environment and personality. Further suggestions as to remedial procedures follow. The book concludes with 25 cases histories illustrative of the material previously discussed and subdivided according to the specific problem to be illustrated. A short bibliography is appended.

For the speech correctionist dealing with the problem of cleft palate, this book affords a comprehensive and well presented aid.

Lehrbuch der allgemeinen Kinderpsychiatrie einschliesslich der allgemeinen Psychiatrie der Pubertät und Adoleszenz. Von M. Tramer, Dr. med. et phil., Priv. Doz. der Universität Bern. Second edition. Cloth. Price, 32 Swiss francs. Pp. 517, with 8 illustrations. Benno Schwabe & Co., 1945.

In this edition the text has been improved and made more complete. It contains fourteen chapters, starting with an introduction of psychiatry of children and a survey of the psychologic views in child psychiatry, followed by the standard of development or evolution in the normal child, methods of investigation, foundation of general psychopathology, general etiology, various diseases, diagnosis, prognosis and treatment. There is a chapter each on social behavior and psychologic hygiene. There is an excellent chapter on 27 illustrative cases. This book should be helpful to psychiatrists.

Jobs for the Physically Handicapped. By Louise Neuschutz. With a foreword by William Rush Dunton Jr., M.D. Cloth. Price, $3. Pp. 240. New York: Bernard Ackerman, Inc., 1944.

The author combines case experiences of physically handicapped persons, with ideas for entertaining and profitable hobbies for these persons, into an interesting and informative book. The suggestions range from individual hobbies to trades such as woodworking and bookbinding; the book also covers cooking, drawing and writing. Details of practice are not given; the references, however, are adequate. The principal merit of the book lies in the interesting presentation of material and the emphasis on the opportunities available and open. This should assist in providing interest and motivation to the handicapped, with whom the great problem is often not to find tasks of which they are capable but to insure that they are motivated to do them. The book is recommended for all persons who are physically handicapped.

General Biology and Philosophy of Organism. By Ralph Stayner Lillie. Cloth. Price, $3. Pp. 215. Chicago: University of Chicago Press, 1945.

The author is well qualified to write about the subject. As stated in the preface, "this short book is an essay on theoretical biology." Mr. Lillie discusses his subject in a clear, logical, understandable manner. He demonstrates how the simple fact of evolutionary change proves that nature is not wholly stable. Evolution clearly indicates that the existence of various forms, systems and activities were at some time new. A general idea of the clarity with which he expresses himself may be obtained from a brief quotation from the summary at the end of the book: "In life processes, as experienced in ourselves, we find a foundation of stable conditions and processes which are physical; superimposed on these we find also the immediately felt quality or property which we call psychical. The latter is a matter of direct experience and is active in the present; and since present time is new (not previously existent), the psychical would appear to provide the required source of novelty." The book is well written and contains a well chosen bibliography and an adequate index.

Pastimes for the Patient. By Marguerite Ickis. Cloth. Price, $3 Pp. 285, with illustrations by Reba Selden Esh. New York: A. S. Barnes and Company, Inc., 1945.

This book, written for the use and guidance of hospital patients, will be of interest to all convalescing patients. Stimulating hobbies and games are described in detail and are well illustrated. Certain of the pastimes, such as photography, are rather ambitious undertakings for the patient. The printing is somewhat small, but it is readable and the book can be recommended.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

NICOTINE CONTENT OF SMOKE FROM CIGARS AND CIGARETS

To the Editor:—Can you give me the comparable effect on the heart of a normal man aged 50 between smoking approximately thirty cigarets a day (inhaling) and six or seven cigars a day (not inhaling).

M.D., Missouri.

Answer.—Thirty cigarets, weighing about 1 Gm. apiece and containing about 2 per cent nicotine in the tobacco, might contain just about the same amount of nicotine as six cigars weighing about 5 Gm. apiece and with the same nicotine content. About one fourth of the nicotine content of the tobacco may be expected to appear in the puffed smoke, though this figure may vary greatly, depending on the manner of smoking. Several writers have reported that a higher proportion would appear in cigar than in cigaret smoke. Only about 12 per cent of the nicotine escapes with the exhaled smoke after inhalation, as compared to about 33 per cent after simple puffing without inhalation, but in either case the bulk of the nicotine appears to be deposited in the mouth or air passages. Accordingly, it might be possible for the thirty cigarets inhaled to yield about the same amount of nicotine absorption as the six cigars not inhaled—about 100 mg. of the alkaloid, which, even if distributed through fifteen hours in the day, would give a concentration of more than 6 mg. per hour, a level at which definite symptoms might be expected in an average normal person, even with moderate habituation to the alkaloid.

Since either cigarets or cigars may vary greatly in their nicotine content, however, and the latter especially may vary greatly in size, and both may be smoked at widely different rates and with the discarding of greatly different amounts of tobacco and retained constituents of the smoke in the unburned stumps, this conclusion required much caution. Moreover, much nicotine may be absorbed from the unburned stump of a cigar by the user who chews or sucks as he smokes, while on the other hand the habitual spitter may rid himself of some of the nicotine taken in by expectoration.

The nicotine discussed is the chief factor found in cigaret or cigar smoke which may be expected to affect the normal heart, with the production of changes in rate and rhythm and even in electrocardiographic patterns in some cases. Carbon monoxide in the smoke would be greater in the cigar smoke than in the cigaret smoke but rarely sufficient to produce symptoms. The same is generally true of the other constituents of tobacco smoke.

The most important experimental study of the factors discussed was that of J. Percy Baumberger (*J. Pharmacol. & Exper. Therap.* **21:**35 [Feb.] 1923).

HIRSCHSPRUNG'S DISEASE

To the Editor:—A 3 year old boy has Hirschsprung's disease. He apparently has never had a normal bowel movement, and the condition has been diagnosed on the basis of x-ray findings. He has been without bowel movements for periods of five to eleven days, at which times an oil enema has been given. He also has received syntropan. If the drug is withheld, considerable discomfort ensues. The child is on a low residue diet and is given Vi-penta pearls. A lumbar sympathectomy has been suggested at or about the age of 6. In my opinion syntropan is contraindicated, at least from a physiologic point of view.

M.D., Georgia.

Answer.—The treatment of megacolon depends on the severity of the condition and the age of the patient. Surgical resection is the procedure of choice when patients have not responded to sympathectomy or medical treatment, but it should not be undertaken if the patient is less than 5 years of age.

Medical treatment usually consists in repeated thorough emptying of the colon, administration of mecholyl bromide, neostigmine bromide or syntropan or spinal anesthesia, other parasympathetic paralyzants and sympathetic stimulants. If the condition does not respond to spinal anesthesia, sympathectomy will be of doubtful value. Sympathectomy sometimes is followed by satisfactory bowel function, but the enlarged colon rarely assumes normal proportions.

A comprehensive consideration of this problem may be found in an article by Penick in The Journal, June 9, 1945, page 423.

IMPOTENCE AFTER PROSTATECTOMY

To the Editor:—A few months ago a patient had a prostatectomy for hypertrophy. Since the operation he has been impotent and has received massages twice a week for five or six months with slight improvement. Could there have been some radical changes of the blood supply and could the blood supply be reestablished by operation? This is not a psychologic case.

W. M. Sykes, M.D., Dallas, Texas.

Answer.—After a surgical operation on the prostate gland there may develop, in a small percentage of patients, various degrees of impotence. This, however, is not caused by an interference with the blood supply to the genitalia. Therefore in this patient the cause of the impotence is not related to a disturbance of the blood supply. It is questionable whether prostatic massages will be of benefit unless there still exists an infection of the prostate gland. Likewise the use of androgen will not be of value unless the impotence is caused by a deficiency of this material. If it has not been done, a careful search should be made for some general disorder that may have a bearing on the patient's sex trouble such as anemia, syphilis or a variety of organic neurologic disorders. It is not yet determined whether a psychic disturbance may not be involved.

MARRIAGE AND PREGNANCY IN MULTIPLE SCLEROSIS

To the Editor:—A woman has multiple sclerosis, which began at the age of 14 and has progressed little up to her present age of 21. Her only symptoms are weakness of the left ankle, with occasional attacks of dizziness and headache with some fatigue. What are the odds of this condition becoming aggravated following marriage and pregnancy? I have 2 patients, men, who are married, with stationary symptoms over a ten year period of time.

M.D., New York.

Answer.—There is no evidence to date to indicate that marriage is contraindicated in a case of multiple sclerosis. When a woman who has multiple sclerosis becomes pregnant it must be admitted that the disease may become active again or increase in severity. Pregnancy, however, is not necessarily deleterious to the course of events (multiple sclerosis) and would probably be even less often so if the patient was more carefully guarded from fatigue during pregnancy. She should be given a longer rest period during the puerperium and afterward. She should not be allowed to nurse her child. It is impossible to anticipate whether the illness will become aggravated or not by a pregnancy. The patient should be informed of all the facts in the matter and then be permitted to use her own judgment.

ANGINA OF EFFORT AND HYPERCHOLESTEREMIA

To the Editor:—A white woman aged 38 has a chief complaint of severe constriction substernal pain on effort. This clears promptly on rest or glyceryl trinitrate and is apparently a typical "angina of effort" syndrome. Other than this her general health has always been good. Examination by a competent cardiologist shows a negative electrocardiogram with the heart slightly enlarged to the left by orthodiagram. Further the studies in the hospital were essentially negative except for a blood cholesterol of 460. The glucose tolerance test was normal. The Wassermann reaction was negative. On a low cholesterol diet her blood cholesterol dropped to 280 and her symptoms disappeared. As long as she watches her diet her cholesterol remains low and she is free of symptoms. If she becomes careless, her cholesterol increases and symptoms return. What could cause this type of hypercholesteremia and could you offer any suggestion, other than dietary, for treatment? The blood pressure ranges from 120/70 to 140/80.

M.D., Pennsylvania.

Answer.—The clinical history as stated is that of angina pectoris on effort, which is due to coronary atherosclerosis in the great majority of cases. Negative physical examination, electrocardiogram and x-ray studies do not rule out coronary insufficiency with angina pectoris. The high blood cholesterol content is in favor of the diagnosis and is a finding that is not at all infrequent in young patients with coronary disease and points undoubtedly to a disturbance of cholesterol metabolism as an etiologic factor in the early occurrence of coronary atherosclerosis in these cases. It is unusual for a woman under 40 to have angina pectoris, but the evidence here seems to support such a diagnosis. The fundamental cause of the hypercholesteremia and disturbed cholesterol metabolism is still a subject for future research.

Undoubtedly dietary treatment is of prime importance, especially in prevention, and it is quite likely that thyroid therapy would prove in this case, as in others, a useful preventive measure, to be carried out cautiously, however, in the face of angina pectoris.

There is no statement about the basal metabolic rate or weight. These should be followed closely. It is probable that the basal metabolic rate would be found low in this case.

POSSIBLE REINFECTION IN PATIENT TREATED FOR CONGENITAL SYPHILIS

To the Editor:—In August 1945 I was consulted by a Negro woman aged 22 who had what appeared to be a typical chancre of the lip—an annular, distinctly indurated, slightly elevated lesion with an eroded surface crusted with grayish yellow exudate; small satellite nodes were palpated at the angle of the jaw. Wassermann and Kahn tests on her blood were both negative and a diligent dark field examination was entirely fruitless. One week later the dark field and Kahn were still negative, while a doubtful Kolmer Wassermann was reported. Five days later Kahn and Wassermann reactions were both strongly positive. An injection of 0.04 Gm. of oxophenarsine hydrochloride (mapharsen) was given, and the lesion promptly improved. No secondary lesions were ever noted. However, further examination did reveal corneal opacities. These the patient attributed to an eye infection arising at the age of 11 years. She had been treated at a reputable clinic, a report from which disclosed diagnosis in 1934 of interstitial keratitis on clinical grounds supported by strongly positive serologic tests. During the ensuing five years treatment had been given in the amount of thirty injections of neoarsphenamine 0.2 Gm. and seventy injections of a bismuth preparation of unstated dosage. When the patient was last seen at this clinic in 1939, residual opacities were present and serologic tests were strongly positive. Serologic tests made on the patient at a local hospital in 1943 were negative for syphilis. The following questions arise: 1. Is this a true primary lesion, and if so does it represent an instance of superinfection? Reinfection does not seem to be likely. 2. Is it likely that a tertiary infection (gumma) would follow this behavior pattern? 3. Am I justified in outlining for this patient a regimen routine for primary cases? 4. Is there any warranty for the use of penicillin as less likely to flare up the eye situation? If I could have anticipated the technicalities in this case, I would have insisted on dark field examination of the satellite nodes. Since August the patient has received ten injections of oxophenarsine hydrochloride (0.04-0.06 Gm.) and four of bismuth subsalicylate 0.2 Gm. At the last examination (Oct. 12, 1945) the Wassermann reaction was strongly positive, the Kahn reaction was negative and the eye condition was unchanged, while faint scarring and depression could be detected at the site of the lip lesion. *Winder L. Porter, M.D., Dover, Del.*

Answer.—1. The diagnosis of extragenital primary syphilis in the case described cannot be definitely substantiated in the absence of positive dark field examination from the lesion itself or from the satellite lymph nodes. Several instances of apparently quite definite reinfection in patients treated for congenital syphilis have been reported in the literature. The most recent papers are those of R. D. Hahn (*Am. J. Syph., Gonor. & Ven. Dis.* **25**:200 [March] 1941) and S. D. Allison (*ibid.* **26**:212 [March] 1942). Four such cases are reported in these two papers, in 1 of which treatment was not begun until late in the course of the disease, although in the 3 others treatment was originally begun in infancy. Reinfection cannot be definitely differentiated from superinfection in human beings (The Changing Concept of Reinfection with Syphilis and Its Applicability as a Criterion of Cure, editorial, *ibid.* **29**:474 [Aug.] 1945).

2. It is unlikely that a gumma of the lip would behave serologically in the manner described in this case.

3. Yes.

4. There is nothing in the situation to indicate that penicillin or any other form of treatment will cause the old interstitial keratitis to flare up. Should it be desired to substitute penicillin treatment for the arsenic-bismuth chemotherapy so far given, the patient should receive a minimum of 2.4 million units of penicillin given in sixty intramuscular injections every three hours day and night over a minimum period of seven and one-half days.

ANT CONTROL IN HOSPITALS

To the Editor:—Our hospital is located at the foot of Missionary Ridge in a wooded section with considerable water drainage from the ridge. The hospital has been infested with small red ants for about two years, but the past few months the number has been even greater. Insecticides have been used as a spray, the legs of beds have been set in cans of the solution and various type of powders have been tried. The pest is a menace in every part of the hospital and nurses' home from the surgery to the basement. Are there any remedies that have been used in other communities for this insect? This certainly cannot be the only hospital that has had this problem. *Helen Esther Gillespie, Supt., Chattanooga, Tenn.*

Answer.—There are a number of different species of ants which invade hospitals and homes. The habits of these ants differ considerably, and no single formula for their control or eradication can be laid down. In fact, the same species of ant may react differently to control measures applied under varying conditions. Some ants have their nests outdoors and enter the buildings for food, while others nest in the walls or basement floors. If their nesting places can be located, the colonies can often be destroyed by applying a small amount of carbon disulfide to the holes entering the nests. The holes should then be covered with packed soil or paper held down with bricks. Carbon disulfide is explosive and inflammable and therefore should not be used near any fire. Sodium fluoride dusted along the places where the ants crawl will often get rid of them, at least temporarily. DDT sprayed freely along baseboards, window-sills and other places where the ants are seen crawling has been found effective in some cases. It is usually applied as a 5 per cent solution in odorless kerosene or as a dust (10 per cent in pyrophyllite). Care should be taken not to get sodium fluoride or DDT into food or where it can be confused with food items. Poisoned baits of several formulas have been employed successfully against ants. Three of these are as follows:

Formula 1. Dissolve 4 ounces of sugar in 1 quart of water and stir in ½ ounce of tartar emetic.

Formula 2. Dissolve ½ pound sugar in 1 pint of hot water and add 1/7 ounce (62½ grains) of sodium arsenate; bring to a slow boil and strain.

Formula 3. For ants that will not eat sweets but prefer grease and meat, work small quantities of tartar emetic into grease or pieces of bacon rind.

These baits are put out in small containers in the areas where the ants are foraging. Small tin cans with the top indented before putting on the covers or tin pill boxes with holes to admit the ants will suffice. Such poisons should be handled carefully and kept out of the reach of children.

EFFECT OF ANDROGENS ON BREAST ATROPHY

To the Editor:—In a patient 54 years old, what would be the effect of the use of androgens, testosterone propionate or methyl testosterone in causing atrophy of the breasts? *M.D., Michigan.*

Answer.—Administration of the androgens testosterone propionate or methyl testosterone will produce an atrophy of the breasts in many women if the dosage is large enough to suppress ovarian function. Such dosages would amount to 200 to 800 mg. of testosterone propionate per month. Atrophy of the breasts is the result of the neutralization of estrogens and the suppression of ovarian function following inhibition of the anterior pituitary gonadotropic hormone secretion. Androgens will cause atrophy of the breasts only through eliminating the influence of estrogen on the breasts, and as in a patient of 54 there is already an absence of estrogens due to the menopause, further atrophy would not occur following androgen therapy for relief of menopausal symptoms.

AGE FOR APPLICATION OF ORTHODONTIC APPLIANCES

To the Editor:—What is the earliest age at which orthodontic work should be begun on a child? *M.D., New York.*

Answer.—The earliest age at which orthodontic "work" should be undertaken is that time when there exists a condition which stands in the way of normal growth, development or function of the teeth and dental structures and which has little or no possibility of being corrected by further growth or developmental processes or by the institution of procedures which are simpler and less disturbing to the child.

It is seldom practical to place orthodontic appliances before the deciduous dentition is complete, although occasionally this has been done with satisfactory results. The nature of the particular problem must be the determining factor.

The correction of the condition may not prevent the occurrence of malocclusion from other causes at a later age and, in those conditions in which the malocclusion is due to discrepancies in harmonious relationships which arise from either genetic or growth and developmental causes, more than one period of orthodontic treatment may be advisable. Treatment in the early years in these instances is for the purpose of obtaining ma-
mum functional contribution to the growth and d
potentialities possessed by the child.

TESTS FOR T

To the Editor:—I am writing you regarding
In a recent article I noted that there ha
of people infected when the muscle is exa
there is some sort of a skin or blood test
chronic cases in which there would perhaps
there is such a test would you be so good as to
from whom I could buy the antigen.
Fred G. Holmes, M

Answer.—While the immediate intradermal t
cipitin test are of considerable help in the diagno
recent trichinosis, these tests are of relatively li
discovering old trichinosis, particularly old subclinica
There is no correlation between these tests during lif
patients with a history of vague muscular pains, and the
at necropsy of Trichinella spiralis in the skeletal muscles a
subclinical infection. Antigen for skin testing may be obta
from either Eli Lilly and Company or Lederle Laboratories, In

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SURGICAL MANAGEMENT OF ACUTE ARTERIAL OCCLUSION

COMMANDER GERALD H. PRATT, MC(S), U.S.N.R.
New York

There is no greater emergency in surgery than that caused by the closure of a major artery with immediate loss of circulation of the parts supplied by that artery. Unless that circulation is restored either by opening the occluded vessel or by adequate collateral circulation, death of the part is inevitable and in immediate prospect. Medical management has to do with stimulating and attempting to develop collateral circulation. We are interested in that too from a surgical standpoint, but our primary interest is to reestablish the function of that particular vessel. Surgical methods to relieve arterial occlusion, as well as means of stimulating collateral circulation, will be discussed in relation to the causes of acute arterial closure. When the major vessel is occluded, it and its collateral circulation go into a spasm. This is nature's protective mechanism, one of shock to reduce hemorrhage and to prevent clotting in the vessels which will be required for the collateral circulation. Efforts to relieve this spasm too early, particularly if surgical intervention of the occluded artery is to be undertaken, may undo nature's protective mechanism and cause irreparable clotting.[1]

One of the most common causes of arterial occlusion is trauma in the form of lacerations or contusions. The laceration involving a vessel may be complete or incomplete, and the distinction between these two in the subsequent course is important. Where there is a complete laceration there are hemorrhage and spasm of the vessel involved. Where such a wound is seen early, a surgical repair of the severed artery is indicated and not technically difficult. The size of the lumen of an artery may be reduced by one half and still have 75 per cent of the normal blood flow through that vessel. Fine arterial silk sutures can be placed not involving the intima, and frequently a single running silk suture is all that is necessary (fig. 1). The hydrodynamic law that the wall pressure at any point is inversely proportional to the rate of flow aids us in this work. The rate of flow in a large artery is so rapid that the wall pressure is reduced. A portion of contiguous muscle can be sewed over the repair (fig. 2). Even veins may be similarly repaired and in the last six months I sutured two lacerations of the vena cava, accidentally produced during the removal of a kidney, satisfactorily with a single running suture. If the complete laceration is seen late, a resection of the artery and the accompanying vein is indicated. A large vessel should not be ligated in continuity. When the iliac artery must be divided a resection of the accompanying vein decreases the incidence of gangrene by approximately 12 per cent. This probably occurs by reducing the rate of venous return and permitting better peripheral nourishment by the restricted blood supply, entering the extremities through collateral circulation. When surgical repair has been attempted, heparin early and then dicumarol should be used, the bleeding time being maintained above fifteen minutes. Regardless of the type of operation, sympathetic nerve blocks should be repeated frequently. It is after the operation that the collateral circulation should be stimulated and spasm reduced or prevented. At times sympathectomy is indicated. The medical measures of stimulating collateral circulation by the abstinence of tobacco, the use of such vasodilatory drugs as whisky and papaverine, postural changes and externally controlled temperatures, and later exercises in a recumbent position are of great aid at this stage. Amputation is an indication of failure of previous surgical attempts and should be done only when all other efforts have failed. Ample time for demarcation and collateral circulation to develop should be given except in the presence of a spreading infection. When amputation is necessary, it should be of the modified guillotine type. By that is meant a simple amputation with the muscles cut slightly higher than the skin and the bone slightly higher than the muscles and the closure with loose approximation of the skin only, and retraction prevented by external traction. The making of flaps will result in pus pockets, gangrene and sometimes death, as has been proved so often in war surgery these last four years. Steel wire sutures reduce reaction.

The incomplete laceration of major vessels results in a hematoma, which may be of a pulsating type and with time develop into a so-called false aneurysm. Five such aneurysms were seen in transporting 450 wounded on one evacuation after the invasion of Pellelieu by a U. S. Navy hospital ship and it was necessary for me to operate on all 5 while at sea, 3 rupturing externally and 2 internally. If seen early, some of these lacerations may be repaired using again the fine arterial silk sutures. If this is not feasible, a resection of the artery and vein with subsequent nerve blocks should be done. After the aneurysm definitely has developed, one must determine whether it is arterial or arteriovenous.[2] Unless there have been serious hemorrhages or the tumor is rapidly enlarging, it is best to delay operation from three to six months to develop adequate collateral circulation. In the arterial type of aneurysm the obliterative opera-

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Read in part before the Combined District Medical Societies of the State of New York (Kings County, Queens County, Nassau County, Sussex County) in October 1945.

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[1] Pratt, G. H.: Importance of a Knowledge of Vascular Surgery in World War II, editorial, Am. J. Surg. **56:** 335-336, 1942.

[2] Pratt, G. H.: Surgical Treatment of Peripheral Aneurysm, Surg., Gynec. & Obst. **75:** 103-109, 1942.

tion is the one of choice; all collateral openings in the sac are sutured, and the sac itself is obliterated by the implant of a contiguous muscle. The retention of the sac is of primary importance,[2a] as the collateral vessels run in or near it; sac excision will interrupt these collateral vessels and cause a failure of the blood supply instantly. If the aneurysm is of the arteriovenous type, all vessels entering the sac itself should be resected and the sac removed (fig. 3). The collateral circulation in the arteriovenous type is so adequate that removal of the sac is not dangerous and its retention may result in a recurrence. Collateral vessels are so immature in the arteriovenous type that they tear frequently and hemorrhage is not unusual. An adequate supply of blood should be available at the time of operation. While in the Navy I operated on 18 aneurysms of traumatic origin, following these principles. Circulation was reestablished in all without the loss of any part of an extremity. In operations on 51 consecutive aneurysms there has been tissue loss in only 1 instance, and in that there was loss of one little toe.

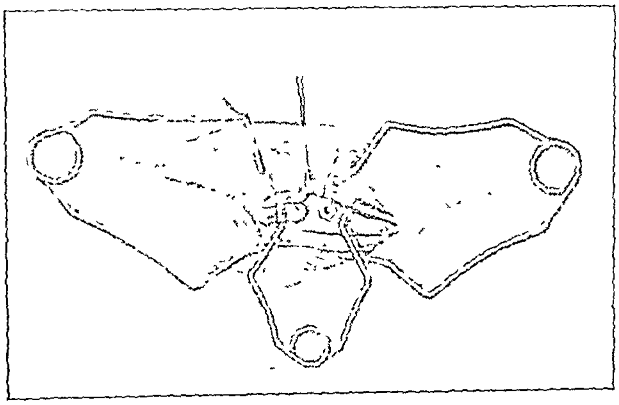

Fig. 1.—Arterial repair with fine surgical silk, not entering intima.

Contusions may cause local thrombosis, which if unrelieved may propagate and result in gangrene. If there are signs of arterial failure distally, the area should be explored and pressure removed. At times it may be necessary to open the artery and remove the thrombus. Frequently the resection of the vessel is necessary to prevent the thrombus from propagating.

Arterial embolism[3] causes the sudden occlusion of a major vessel, usually at a point of bifurcation. Thus we see them at the bifurcation of the aorta 12 per cent, at the division of the external and internal iliacs 18 per cent, at the femoral and the femoral profunda 50 per cent and at the anterior and posterior tibial arteries 12 per cent. Ninety-five per cent of these arterial embolisms develop from left sided heart disease of the rheumatic type with the addition of auricular fibrillation. There has usually been some exciting factor such as a surgical operation or the labor of pregnancy, which precipitates the embolism. The sudden pain, inability to use the part, coldness and a whiteness of the limb in the presence of auricular fibrillation are diagnostic. Surgical management by embolectomy is indicated if the patient is seen within twelve to twenty-four hours, and success depends on this time factor just as it does in ruptured peptic ulcer. Occasionally success may follow delay; I have removed an embolus successfully sixty hours after it occurred at the bifurcation of the aorta. Since most of these emboli occur in the lower extremities, the artery can be exposed just below the inguinal ligament where it is subcutaneously situated. A longitudinal incision in the artery is made and the site of the embolism determined by a probe. Ingenuity is sometimes necessary to remove the clot. Suction on a catheter, the formation of a corkscrew out of a silver or steel wire, forceps, and the manual milking with the hand have all been used successfully (fig. 4). After the clots are removed, the artery is washed with heparin solution and the wound closed by a single running silk suture, not entering the intima. Any generally trained surgeon is capable of performing this operation. Sympathetic nerve blocks after the operation and the use of heparin and dicumarol again are necessary. The medical measures to stimulate collateral circulation should be continued. Since the first successful embolectomy by Labey in 1911 there have been 382 recorded. I have performed the operation in 27 instances with a return of circulation at 61.5 per cent. Only 1 out of every 4 patients is alive today, death being due to the underlying heart condition, but this figure is favorably comparable to that of carcinoma of the breast after five years.

Arterial thrombosis may acutely occlude a previously diseased vessel. In these patients a large plaque may loosen from the wall and close the lumen like a trap door, or an artery gradually closing may suddenly close with a clot. It is rarely possible to remove such a thrombus because of the disease in the vessel. Sympathetic nerve blocks are at times helpful, but eventually amputation becomes necessary.

At times infection may cause acute occlusion, the streptococcus and the gas group of Clostridium perfringens being particular offenders. Their management includes the use of the sulfonamide drugs, penicillin and specific serums and, if uncontrolled, a relatively early amputation at the vital level, the level being determined by the color of the tissue, the fact that the muscle bleeds well and contracts when stimulated. While there can be no delay in amputation in the presence of the clinical picture of gas gangrene infection, it is well to add a word of caution at this time regarding the presence of air or crepitation in a wound. Crepitation does not necessarily mean a gas bacillus infection. The entry of a high velocity missile may drive air into the tissues, causing a crepitus, and the same may occur after puncture wounds from airplane or automobile accidents. The diagnosis of a gas bacillus infection should be made on the clinical picture with fever, a high pulse rate, sanguineous drainage from the wound, massive edema and the anxious sick look of the patient being suggestive. I received 6 patients aboard the U. S. Naval Hospital Ship *Relief*

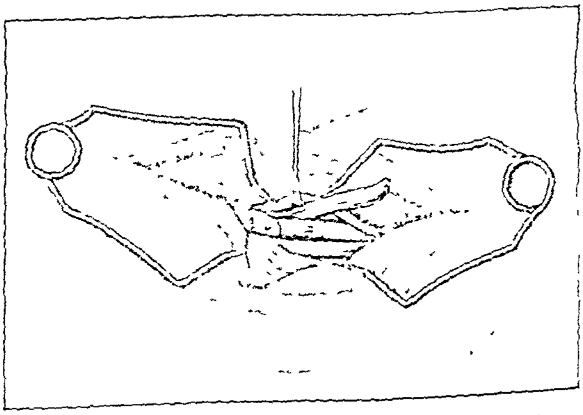

Fig. 2.—Repair of artery completed, reinforced with contiguous fascia.

[2a] Matas, R.: Personal Experiences in Vascular Surgery, Ann. Surg. **112:** 802, 1940; personal communications to the author

[3] Pratt, G H.: Surgical Treatment of Peripheral Embolism, Am. J. Surg. **56:** 566 572, 1942.

for amputation on the basis of crepitation in the wound or Clostridium perfringens cultures. The clinical picture of gas gangrene was not present and in none of these 6 was amputation performed. These organisms are contaminants in many wounds and at times are controlled by penicillin. The mere presence of Clostridium perfringens organisms does not necessarily mean a gas bacillus infection unless the clinical picture also is present. Massive doses of penicillin may change our conception of gas infections.

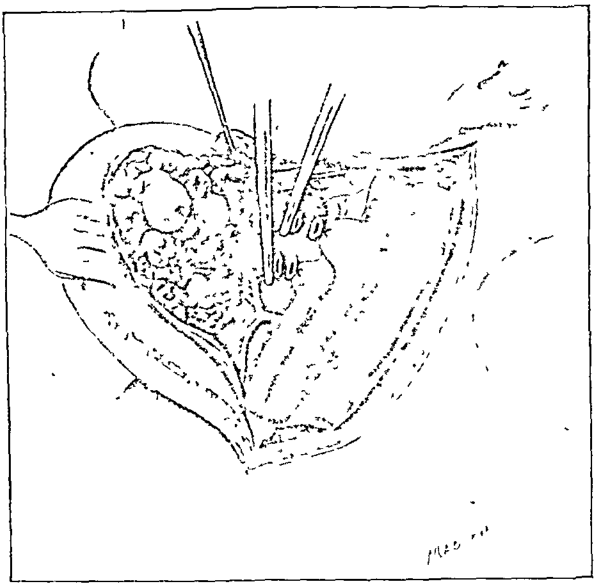
Fig. 3.—Arteriovenous aneurysm, showing the extreme degree of collateral development in the arteriovenous type. It was necessary to resect most of the carotid artery and jugular vein.

One of the most common causes for the occlusion of the artery of the upper extremity is a scaleneus anticus syndrome with or without cervical rib. This may cause a thrombosis of the subclavian artery with the symptoms of numbness, weakness, change of color, absence of the peripheral pulse and at times ulcers or even gangrene. When there is pressure on the brachial plexus, symptoms may be more neurologic. At such times the symptoms are of anesthesia and paresthesia with tingling and pain, particularly on the ulnar nerve side of the hand. Treatment for this condition is scalenotomy with removal of any bony obstruction (if present), the rib being rongeured away. A band to a rib from a long transverse vertebral process or an anomalous formation of the first or second ribs can produce a similar syndrome. After operation circulation should be stimulated through collateral circulation in the methods already mentioned, including stellate ganglion blocks or thoracic sympathectomy. The work of White and Smithwick has shown that the stellate ganglion should not be removed. Excising the stellate ganglion is a postganglionic operation and sensitizes the part to sympathin or epinephrine and produces greater spasm than before. A preganglionic operation can be done by dividing the sympathetic chain below the third dorsal ganglion, resecting the communicating fibers to the second and third intercostal nerves and a section of the nerves themselves and leaving the sympathetic chain and ganglions in situ. All connections between the chain and the costal nerves are interrupted. The retention of the chain and the stellate ganglion preserves the chain cells and prevents the postganglion sensitization type of reaction from occurring. White cleverly covers the sympathetic chain with a tantalum foil, and sews it into the intercostal muscle, further to insure no future connection with the nerves to the arm.

The recent war, partly fought in the arctic region, together with the submarine warfare and exposure of men to cold and wet in open boats, brought to prominence the lesions known as frostbite, immersion foot[4] and the so-called trench foot of World War I. The cooperation of the British and American medical services permitted these patients to be segregated and studied, and from this study a new conception of these lesions and their treatment evolved.

When a foot is frostbitten, actual freezing of the tissues occurs. In the immersion or trench foot syndrome the foot does not actually freeze, but it becomes chilled, anesthetic and edematous. In trench foot, trauma from walking or standing on these injured feet is added. At sea the feet are not traumatized, but, with the dependency in the water or in a boat, edema is severe and as the result of starvation and hypoproteinemia this edema is aggravated. Immersion foot may occur in prolonged submersion in warm water as well, the syndrome being a chemical edema one. The trench foot group are more prone to have infection and to lose the limbs. This was shown by the reports of White,[5] Patterson[6] and Anderson[7]—only 1 of 100 immersion feet was amputated, while 24 of 231 from Attu lost a foot or toes.

When the part is warmed and the circulation is restored to these limbs, it rapidly warms the deep tissues, and the contiguous transmission of this heat to the damaged skin surface causes discoloration and bleb formation. The circulation in the skin has been more impaired by the cold, particularly the venous and lymphatic vessels, and it is unable to remove the increased arterial supply rapidly, and blebs and edema result. If continued, the skin breaks and death of the superficial tissues occurs with gangrene. This excessive

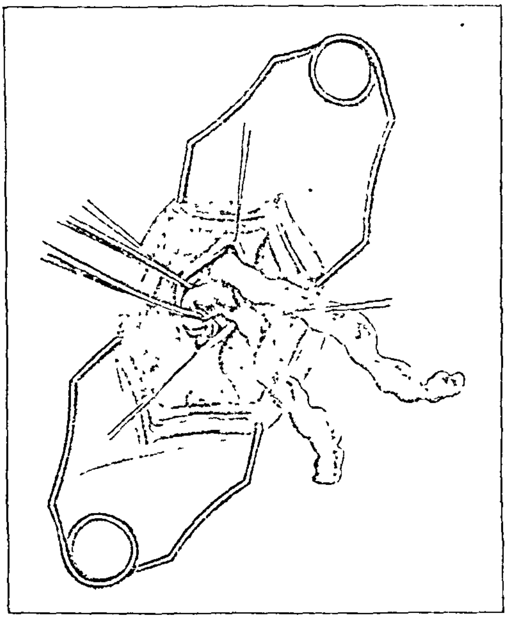
Fig. 4.—Removal of embolus and accompanying thrombosis from femoral and iliac arteries.

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[4] Webster, D. R., Woolhouse, F. M., and Johnston, J. L.: Immersion Foot, J. Bone & Joint Surg. 24: 785-794, 1942.

[5] White, J. C.: Personal communication to the author.

[6] Patterson, R. H.: Personal communication to the author.

[7] Patterson, R. H., and Anderson, F. M.: Effects of Prolonged Wet and Cold on Extremities, Bull. U. S. Army M. Dept., 1940, no. 75, pp. 67-70.

vasodilatation of the part is probably due to the absorption of diseased tissue as the limb becomes warmer.

It was found early that patients themselves realized the danger of too rapid warming and return of circulation. Patients were seen to open windows and put their feet out and frequently complained that they were much more comfortable back in their life boats. This fact, and some judicious thinking by such men as Webster, Woolhouse and Johnson of the Royal Canadian Navy and White and Scoville[8] and others, led to the cooling or refrigeration treatment during this hyperemic stage. Therapy thus consists in cooling, best applied by temperature controlled cradles or ice bags and electric fans. In one to six weeks this stage has subsided and the superficial tissues can again carry the circulation load.

Many have residual pain and stiffness of joints and unhealthy thin skin. Biopsies have shown that there is a subcutaneous fibrosis which causes the inability of the tendons to flex well. Collagen deposits around the nerve cause the pain. Physical therapy, high vitamin diets and encouragement help at this stage. In those in whom burning pain persists when the peripheral circulation is impaired, or in the group in which spasm is a factor, lumbar sympathectomies are indicated. In these the response has been excellent. Nerve blocks should be done prior to this procedure to select the ones who will best respond. The residual causalgias are a sympathetic surgical problem. Our conception of therapy for these patients has changed often in the past years and no doubt will again. Only by pooling our knowledge and thoughts, however, can we progress. Perhaps the still unreported human experiments of the Germans, inhuman as they were, may help us when they are presented. Recently some work has been reported with the use of such anticoagulants as heparin to reduce the viscosity and coagulability of the blood, and this, in combination with refrigeration, offers the best possibilities at this time in the treatment of these patients. Dicumarol will also be of help in this respect. The hospital treatment, then, will consist in refrigeration of the part for a considerable length of time and the intravenous use of heparin. In controlled experiments only the limbs which were treated with heparin survived the refrigeration experimentally produced. Plasma will replace the lost protein. Prophylactically, much can be done for these patients. Certainly no one with a diseased artery should be exposed either in cold or wet weather or in refrigeration boxes or cars, and adequate covering against the weather and water without constriction of the part is important. It is well to remember that on even a moderately cold day the addition of a cold wind or wetting can produce this syndrome, and that repeated short exposures to extreme cold, such as running in and out of an ice box, may cause the same damage as a longer period of continuous cold of a low temperature. If one is wet and cold it would be well to remove any constricting type of gear, thus actually starting the treatment at that time. It is important that in the transportation to the hospital this chilling be continued. Again, anything which throws vessels into extreme spasms, such as tobacco, should be curtailed. Drugs such as alcohol, on the other hand, will be beneficial. Sympathectomy for residual pain or inadequate blood supply will remain the best delayed therapy for selected patients.

65 East Fifty-Fifth Street, New York 22.

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THE ORAL MANIFESTATIONS OF IRON DEFICIENCY

WILLIAM J. DARBY, M.D., Ph.D.
Nashville, Tenn

The recent recognition that lesions of the buccal tissues may be due to vitamin B complex deficiencies has led to the unjustified assumption by many that all such lesions are manifestations of vitamin deficiencies. In fact it has been claimed that changes in the lingual papillae are specifically due to niacin deficiency[1] and that the glossitis encountered in other conditions is probably due to "chronic niacin deficiency."[2] Similarly it has been implied that fissures at the angles of the mouth are pathognomonic of riboflavin deficiency[3] although it has been demonstrated that such lesions may heal following the administration of niacin,[4] pyridoxine[5] or pantothenic acid[6] or that they may be resistant to therapy with all known B factors.[7] Attention has been directed repeatedly to the multiplicity of etiologies of such oral lesions.[8]

The association of atrophy of the lingual papillae, glossitis and cheilosis with hypochromic anemia has been noted,[9] and the well known Plummer-Vinson syndrome[10] is characterized by stomatitis, dysphagia and hypochromic anemia. Vinson and Schmidt[11] have depicted the glossitis and perlèche which accompany this syndrome. The etiology of these oral changes is not clear. Vinson[12] has attributed the various evidences of malnutrition, such as anemia and glossitis, in these cases to interference with nutrition caused by the dysphagia. Kernan[13] reported examining a case resembling Plummer-Vinson's syndrome which exhibited atrophic lesions of various mucous membranes (nose, mouth, vagina, rectum) which were ascribed to a vitamin deficiency and suggested that esophageal scars and webs may form "on a basis of dietary deficiency." In a similar vein Wintrobe[14] writes that in chronic hypochromic anemia "The cheilosis of riboflavin defi-

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From the Department of Medicine, Vanderbilt University School of Medicine.

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ciency may be present." Meulengracht and Bichel[15] reported that riboflavin exerted beneficial effects on the external mouth lesions in cases of Plummer-Vinson syndrome but did not relieve the other manifestations including the dysphagia, a symptom which has been described as due to a deficiency of the vitamin B complex.[16]

Waldenström[17] in a too little known paper has presented clinical evidence interpreted to show that "fissures in the corners of the mouth, sores on the tongue, pains and spasm in the throat, changes in the nails and even vulvovaginitis may be healed after a sufficient administration of iron without any other therapy." Waldenström did not demonstrate that his cases were resistant to therapy with the B complex; hence his conclusions might be criticized on the grounds that the patients may have taken a better diet during the period of iron therapy and thereby overcome a concomitant B complex deficiency. The reported studies do not permit a decision as to whether such glossitis and cheilosis may be a manifestation of iron deficiency per se or whether their association with hypochromic anemia is due to an accompanying B complex deficiency. The absence of any general understanding of a possible role of iron deficiency in the production of these lesions of the oral mucosa is illustrated by the fact that Schour and Massler[18] in a recent review of the effects of dietary deficiencies on oral structures dismiss the subject with a single sentence: "The oral manifestations of iron deficiency have been given much less consideration than those of calcium deficiency and merit investigation."

It is my purpose in this report to present evidence that atrophic lingual papillae, glossitis and/or angular fissures which accompany iron deficiency anemias are often due to the lack of iron alone and not to accompanying B complex deficiencies. The frequent confusion of these cases with B complex deficiencies will be illustrated by the case reports. Finally, the effect of this finding on the interpretation of clinical evidences of the prevalence of B complex deficiencies within the general population as revealed by nutrition surveys will be discussed.

MATERIAL AND METHODS

The cases here reported were taken from the Nutrition Clinic of the Department of Medicine of Vanderbilt University Hospital with the exception of 1 (case 4), which I followed during a nutrition survey in North Carolina.[19] It has been a common experience in this clinic to encounter patients, especially women, with the recurrent oral signs as enumerated and with accompanying easy fatigability, indigestion, "nervousness" and other symptoms frequently ascribed to "subclinical B complex deficiency" but who fail to respond to therapy with adequate doses of pure or crude B vitamins. Many of these patients have dietary histories which appear adequate; that this is true has been substantiated by laboratory estimations on body fluids.[20] Such patients have been scrutinized in an effort to ascertain the origin of these lesions. From this group there emerged the study herein reported.

The iron absorption tests reported in some of these cases were carried out by the technic developed by Hahn and his co-workers,[21] utilizing radioactive iron. The absorption by an adult of more than 5 per cent of a test dose of radioactive iron is to be interpreted as definite evidence of the existence of an iron deficiency. Dr. Paul F. Hahn of the Department of Biochemistry of Vanderbilt University School of Medicine carried out these studies in 3 of the cases here reported.

The syrup referred to as B complex syrup contained 25 mg. of niacin, 1 mg. of riboflavin and 3 mg. of thiamine to 4 cc.

REPORT OF CASES

CASE 1.—Mrs. E. I. L., aged 38, white, quadrigravida, was first admitted on April 1, 1940 with the complaint of a hurting and burning of the stomach and chest after meals for the past five years. Her mouth had been constantly sore. There had been no diarrhea, but there had been constipation during the past three years. Increased tiredness had been noted. Examination revealed that the patient was apprehensive and underweight (weight 110 pounds [50 Kg.], height 63 inches [160 cm.]). The skin of the hands was hard and dry. There was oral sepsis, and the tongue exhibited imprints of the lower teeth without papillary atrophy. Moderate thyroid enlargement was noted, but there were no signs of toxicity and the basal metabolic rate was within normal limits. A diagnosis of "subclinical pellagra" and nodular, nontoxic goiter was made. She was treated by dietary instruction, plus brewers' yeast, cod liver oil and niacin 50 mg. three times a day. The teeth were extracted. Some improvement was exhibited, but she stopped coming to the clinic in October 1940.

The second admission of this patient was on Nov. 11, 1944, at which time she complained of pruritus vulvae of two years' duration. There were no other symptoms suggesting diabetes mellitus. The only other genitourinary complaint was frequent menses, occurring every two to four weeks. There were occasional hot flashes. Her tongue burned and her whole mouth was sore at intervals. She had worn dental plates for four years. One month previously she had had diarrhea for a fifteen day period.

On physical examination she appeared to be moderately well nourished (weight 123 pounds [56 Kg.]). There was dry pigmented skin of the ankles and shins, interpreted to be dermatitis ab igne. The lips were normal in appearance, the tongue was pink with definite atrophy of the marginal papillae. She wore dental plates. The right lobe of the thyroid was enlarged. An apical systolic murmur was heard on occasions. No alterations of reflexes were elicited.

Laboratory examination revealed a hemoglobin concentration of 10.5 Gm. per hundred cubic centimeters, an erythrocyte count of 3.90 million per cubic millimeter, a total white blood cell count of 7,300 per cubic millimeter, a packed cell volume of 36.5 per cent and a basal metabolic rate of —9 per cent.

She was treated with phenobarbital 0.03 Gm. three times a day and B complex syrup 4 cc. three times a day. On November 18 the patient was less nervous, but the sore mouth persisted. The epithelial tufts were absent from the filiform papillae, the tongue was slick along the margins and the tip, there were red denuded areas on the left margin and at the tip, and some central fissuring was present (fig. 1). The pruritus vulvae persisted. Treatment with B complex syrup was continued as before, and sodium perborate mouth wash was added. There was no improvement by December 6. The gynecologic consultant on that date reported no obvious cause for the pruritus. A negative thrush culture was obtained. The same therapeutic measures were continued until Jan. 10, 1945 with no improvement. The patient complained bitterly at this time of severe pruritus,

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"rawness and burning of the tongue and lips" and of cracks in the corners of the mouth. The tongue continued to show the same abnormalities as before. The hemoglobin level was again reported as 10.5 Gm. Other laboratory findings of interest were a serum vitamin C of 0.3 mg. per hundred cubic centimeters, serum carotene of 347 micrograms per hundred cubic centimeters and serum vitamin A of 161 international units per hundred cubic centimeters.

A radioactive iron absorption test on Dec. 6, 1944 had revealed an uptake of 97 per cent of a test dose of 7 mg. On Jan. 10, 1945 there was prescribed 0.3 Gm. of ferrous sulfate three times a day in addition to the B complex syrup. One week later the patient volunteered the information "My mouth is well." The dusky spots had disappeared from the tongue, but the fissure and atrophic margin remained. By January 31 there had occurred further improvement on this regimen—the tongue and mouth were not sore, there was complete relief for the first time from the pruritus vulvae, and she was much less nervous. The tongue appeared to be normal on examination. The red blood cell count was 5.25 million, the hemoglobin was 12.5 Gm. and the packed cell volume was 44 per cent.

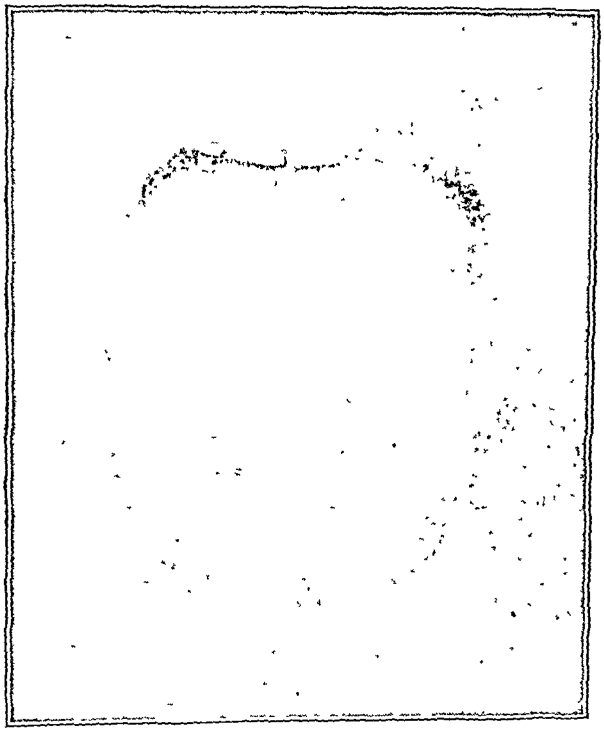

Fig. 1 (case 1).—Appearance on Nov. 18, 1944. Note the swelling of the tongue and the atrophy of the papillae. See text for complete description.

The administration of iron was continued, and on May 9 the hemoglobin had reached 13.0 Gm. and the packed cell volume 47 per cent. All therapy was discontinued on June 6, and the patient has continued well to date (five months).

This case presented the so-called classic symptomatology of "subclinical B complex deficiency"—a previous diagnosis of "subclinical pellagra," oral lesions, easy fatigability, constipation and a bout of diarrhea—yet she responded not at all to nine weeks of therapy with thiamine, niacin and riboflavin. She exhibited a mild hypochromic anemia, conditioned by excessive menstrual bleedings, and there was a very high iron uptake. It is certain that she was deficient in iron. One week of iron therapy was followed by subjective relief from the sore mouth, and within three weeks the appearance of the tongue was normal. This was accompanied by a satisfactory rise in the hemoglobin level and, interestingly enough, dramatic relief from a persistent pruritus vulvae.

Case 2.—Mrs. M. M., aged 31, white, a tertigravida, was first admitted on March 23, 1929 with the complaint of stomach trouble and shortness of breath. She had experienced a burning sensation in the epigastrium for many years. This had been treated by a Sippy regimen without success. While on the Sippy diet she had developed a dysphagia. A gastroenterostomy had been performed at another hospital, and the recovery was complicated by a generalized infection necessitating prolonged bed rest. Physical examination at this admission revealed that she was thin and nervous, was 65 inches (165 cm.) tall and weighed 99 pounds (45 Kg.). The mouth was edentulous, and the mucous membranes were pale. The tongue was coated except for some raw reddening over the anterior central portion. X-ray examination revealed the gastroenterostomy and spasticity of the colon. The red blood cell count varied from 3.5 to 4.3 million; the hemoglobin was from 60 to 88 per cent. No specific therapy was instituted, and the patient was discharged on the twenty-eighth day with the diagnosis of psychoneurosis.

The second admission was on April 18, 1937 with the complaint of a mass on the gums. The patient weighed 111 pounds (50 Kg.). The removal of a small fibroma from the gums was followed by considerable bleeding. The hemoglobin was recorded as 11.5 Gm. No other therapy was administered.

The third admission was on Feb. 9, 1943 for the complaint of bloating, smothering, shortness of breath, belching and dizziness. Since last seen in this clinic the patient had frequently experienced a sore mouth and tongue, and difficulty in swallowing. She had restricted herself to a diet composed largely of milk and free of meat because of the dysphagia. Her last menstrual period was in November 1942. On physical examination she was seen to be thin, pale and undernourished, and she weighed 106 pounds (48 Kg.). There was pitting edema of the ankles. She wore dental plates. There were scars at the corners of the mouth. The tongue appeared swollen and was denuded of papillae anteriorly. An apical systolic blow was heard. Laboratory findings of interest were an erythrocyte count of 3.32 million, hemoglobin of 4.7 Gm., packed cell volume of 24 per cent, a serum iron of 59 micrograms per hundred cubic centimeters and serum albumin of 4.8 Gm. per hundred cubic centimeters with a total serum protein of 6.6 Gm. per hundred cubic centimeters. The stool was negative for blood. The thiamine excretion in the urine, the serum carotene, vitamin A and ascorbic acid were all within a normal range. There was 20.5 degrees of free hydrochloric acid after histamine stimulation.

Treatment with ferrous sulfate, dilute hydrochloric acid and a regular diet was followed by a slow rise in hemoglobin and a small reticulocyte response (4 per cent). She was given a total of 1,500 cc. of blood by transfusion. The addition of brewers' yeast, cod liver oil and a high protein diet was made. On July 9 the red cell count was 4.46 million and the hemoglobin was 13.0 Gm.

On Aug. 3, 1943 the patient returned with the complaint of menorrhagia. Endometrial biopsy revealed an atrophic endometrium. Treatment with diethylstilbestrol was instituted, but she failed to return for complete follow-up.

On Sept. 24, 1944 the patient again returned because of menorrhagia. Ferrous sulfate, brewers' yeast and cod liver oil were prescribed, but the patient failed to take the iron because of a gastrointestinal disturbance which followed the first dose.

The patient was readmitted on April 14, 1945 with the complaint of nervousness and dysphagia. There had been no burning of the eyes, no paresthesias, sore mouth, skin lesions or diarrhea. The physical examination was essentially negative. The tongue had a "patchy coating with intact papillae." There were no neurologic changes. No edema was observed. Laboratory examination revealed an erythrocyte count of 4.08 million, hemoglobin 11.5 Gm. and white blood cell count 4,000. No therapy was instituted

On June 20 she complained of a sore mouth and tongue. Examination of the tongue revealed a patchy denudation of the epithelium (fig. 2). The hemoglobin concentration was 11.0 Gm. Radioactive iron absorption was 47 per cent of a test dose of 4 mg. Gastric analysis showed 10 degrees of free hydrochloric acid in the fasting specimen and 16 degrees in a specimen after alcohol. X-ray examination of the chest, gallbladder and gastrointestinal tract demonstrated no active lesions.

The oral administration of ferrous sulfate 0.3 Gm three times a day was instituted. The patient reported that the sore mouth disappeared within a week. On July 18 the dysphagia had also disappeared and the tongue was normal in appearance. The hemoglobin level had risen to 13.5 Gm and the packed cell volume to 43 per cent. On October 9 the patient continued to be free from complaints She weighed 106 pounds (48 Kg). The hemoglobin was 14.2 Gm, the red cell count 5.11 million and the packed cell volume 48 per cent. Iron administration was discontinued on this date. The tongue has remained normal (fig. 3).

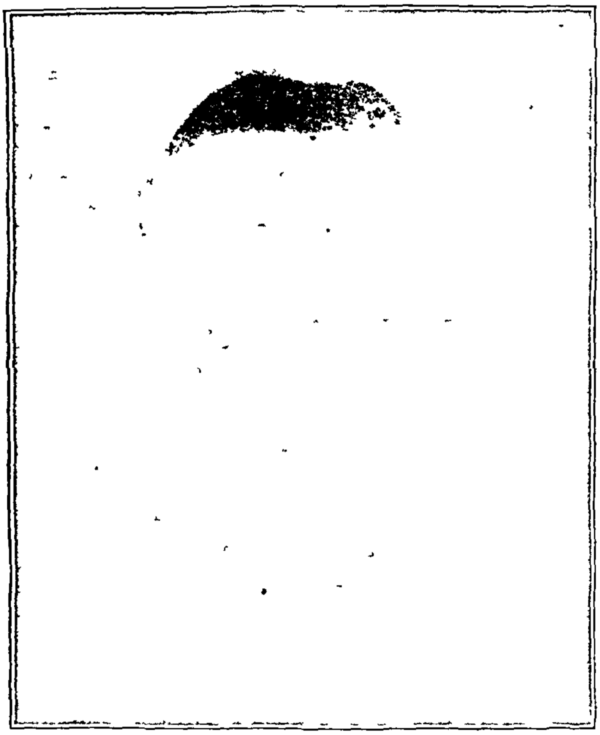

Fig 2 (case 2)—Appearance on June 20, 1945, showing the papillary atrophy and denudation of the epithelium before iron therapy was instituted

This history suggests a mild Plummer-Vinson syndrome. It is of considerable interest that the lesions of the tongue observed in this patient intermittently over a period of sixteen years were always accompanied by a hypochromic, iron deficiency anemia which can be attributed to abnormal blood losses. Again, the high iron absorption and the response to therapy proves the existence of the iron deficiency. The response of the tongue changes (compare figure 2 and figure 3) was purposely tested without preceding B vitamins in order to determine whether they responded to this single agent. It is not believed that the diet of the patient was altered during the last therapeutic trial, as no instructions were given her concerning diet and she did not gain in weight during the interval.

Case 3—Mrs. E. X, aged 36, white, a tertigravida, was admitted on Jan 25, 1932 with the complaint of weakness. All teeth had been extracted twelve years previously. Three years before she had undergone an abdominal operation, following which her menstrual periods had been of twelve days' duration. She weighed 111 pounds (50 Kg.) and was 65 inches (165 cm) tall Complete physical examination revealed nothing remarkable. Laboratory studies showed a red blood cell count of 4.0 million, with a hemoglobin concentration of 9.8 Gm. The impression recorded was psychoneurosis, adentia and secondary anemia She was treated with elixir of iron, quinine and strychnine, and psychotherapy, with some improvement.

The second admission was on Sept. 26, 1940, when the patient complained of choking with food for the past five years. During the last year the "least lump in food caused choking." She had noted intermittent cracking of the corners of her mouth for the past year. She had had a diarrhea the previous spring. There had been no dermatitis, no photophobia, no night blindness For the last few months the patient had experienced menstrual irregularities. Her dietary had included a quart of milk daily and liver once or twice a week. On physical examination she weighed 108 pounds (49 Kg.). Her lips were dry and shiny, there were fissures at the corners of the mouth, and a "splotchy reddening of the tongue with definite atrophy over the tip" was noted. The skin was dry, the nails pale. Slight ankle edema was present. Examination with the slit lamp revealed a slight but definite invasion of the cornea. Treatment with 4 mg. daily of riboflavin subcutaneously was instituted. On September 30 there appeared to be some improvement of the lip lesions, but the tongue was not altered. The hemoglobin at this time was 11.4 Gm, the erythrocyte count 3.94 million. The patient was advised as to a good diet, and supplements of dried brewers' yeast 30 Gm. three times a day were prescribed

On November 7 the patient weighed 114 pounds (52 Kg). The mouth was still sore despite the continuous administration of yeast. The dysphagia persisted. Therapy was unchanged. On December 5 the mouth was still sore and burning, and the angles of the lips were fissured. Her last menstrual period had been of two weeks' duration.

Despite the continued taking of the prescribed yeast and a dietary consisting of a quart of milk, ground meat or liver and vegetables each day, the sore tongue and weakness persisted until December 11. On this date the tongue showed an increase of the areas of redness, with definite papillary atrophy. The invasion of the cornea persisted. Treatment was instituted with 16 mg. of pyridoxine daily for a period of one week, with no improvement The yeast therapy was then resumed.

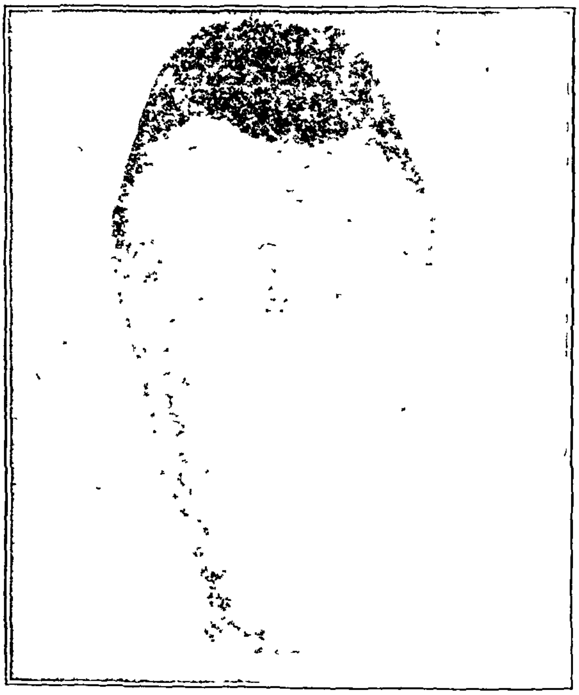

Fig 3 (case 2)—Appearance on July 18, 1945, showing the tongue following the administration of iron to the patient

On Jan 8, 1941 ferrous sulfate in doses of 0.3 Gm three times a day was prescribed On February 5 the patient had no sore tongue and the filiform papillae were numerous. The angular stomatitis had disappeared. The dysphagia was definitely lessened. The corneal invasion was still present on slit lamp examination. On March 5 the progress note recorded continuous and definite improvement since the moment iron was started. The iron therapy was continued, and on May 2 the hemoglobin level had reached 14.0 Gm. and the red cell count was 4.38 million. Gastric analysis showed no free hydrochloric acid after an alcohol test meal. The administration of ferrous sulfate was discontinued. The patient has been followed in numerous clinics through Oct. 9, 1945, with no return of the oral lesions or of the dysphagia.

This is again a case of Plummer-Vinson syndrome and illustrates the complete absence of any effect on the oral lesions or the dysphagia of the administration of B vitamins and the prompt and complete response to iron.

Case 4.—Mrs. R. D., aged 36, white, a quintigravida, who was seen on Sept. 9, 1943 during the course of a nutrition survey, had symptoms of a sore tongue and of fissures at the angles of the mouth for the past two months. About two months before she had noted a lower abdominal mass. On physical examination there were noted lesions at the angles of the mouth described as "honeycomb" crusts on a pink base. The tongue exhibited irregular atrophic areas. A lower abdominal mass, interpreted as a uterine fibroid, was palpated. Otherwise the routine physical examination was not remarkable. The cornea, examined with the slit lamp, showed definite capillary invasion. There was no photophobia. Laboratory examination revealed hemoglobin 9.3 Gm., erythrocytes 4.04 million, packed cell volume 30 per cent, plasma ascorbic acid 0.1 mg., plasma carotene 176 international units per hundred cubic centimeters, plasma vitamin A 69 international units per hundred cubic centimeters, total serum protein 6.7 Gm. per hundred cubic centimeters. The daily dietary intake calculated from a one week record included 0.91 mg. of thiamine, 1.07 mg. of riboflavin and 8.2 mg. of niacin and 1,650 calories.

Reexamination on October 11 revealed an identical condition of the eyes, tongue and lips. Treatment was instituted with ferrous sulfate 0.3 Gm. twice a day, plus riboflavin 5 mg. three times a day orally. On October 26 there was a definite subjective improved sense of well being, and the tongue and mouth were not sore. The oral lesions had completely healed. The corneal invasion persisted. The same therapy was continued. On November 11 the mouth and tongue were still normal, the corneal findings unaltered. The hemoglobin on this date was 13.0 Gm., the packed cell volume was 43 per cent and the red cell count was 4.92 million.

The findings in this case suggested a diagnosis of ariboflavinosis, but the failure of a response of the ocular lesions [22] and the reasonably satisfactory level of intake of riboflavin seem to contradict such a diagnosis. In view of the coexisting iron deficiency, the typical appearance of the lingual lesions and the response of the oral lesions alone, it now seems more reasonable to attribute these oral lesions to the lack of iron. At the time, however, it was thought that this response of the oral lesions was due to the riboflavin. This illustrates the confusion which may arise in the interpretation of the efficacy of a therapeutic agent unless the agents are tested separately, a point not always appreciated in published case reports.[23]

Case 5.—Mrs. M. L., aged 33, white, octigravida, was first admitted to the gynecologic service in October 1942 for a plastic repair of a cystocele and rectocele. There was no glossitis or cheilosis, and the hemoglobin concentration was 12.2 Gm. with a red cell count of 4.51 million. On April 29, 1943 the patient was referred to the medical service with the complaint of cracks in the corners of her mouth and occasional soreness of her tongue. During the previous month she had been given B complex syrup 4 cc. three times a day, with no improvement. The patient's dietary history and calculated dietary intake were reasonably adequate, with an average daily intake from food of 2.0 mg. of riboflavin, 1.5 mg. of thiamine and 8.66 mg. of niacin and 1,840 calories.

Physical examination revealed that the patient was underweight and worn (weight 87 pounds [39.5 Kg.] height 61 inches [155 cm.]). There were fissures at the angles of the mouth and atrophy of the papillae over the tip of the tongue. Slight photophobia was present, and on slit lamp examination there was grade 2 capillary invasion of the cornea. The laboratory findings of interest were hemoglobin 11.0 Gm., red blood cell count 4.10 million, packed cell volume 37 per cent. The serum carotene, vitamin A, ascorbic acid and serum proteins were within normal limits.

The patient was continued on the same dosage of B complex syrup with the additional administration of 5 mg. of riboflavin daily. No improvement had occurred in the oral signs or the corneal invasion by May 14. On the latter date pyridoxine 50 mg. three times a day was added to the other B vitamins which the patient was receiving. The mouth lesions seemed much improved by May 28, and the pyridoxine was discontinued. The oral lesions reappeared at intervals, however, and the supplementary B complex syrup was continued intermittently with or without the addition of brewers' yeast until Jan. 9, 1945. On this date the patient again had fissures at the corners of the mouth which did not respond to therapy with 12 Gm. of yeast three times a day.

On February 22 the patient returned complaining of the fissures at the angles of her mouth. The hemoglobin concentration was 11.0 Gm. Ferrous sulfate 0.3 Gm. three times a day was prescribed in addition to the yeast. On March 15 there was no soreness of the mouth. The packed cell volume had risen to 40 per cent. During the subsequent nine months there has been no recurrence of the angular fissures, and the tongue has remained normal in appearance. On April 30 the hemoglobin was 12.5 Gm., the packed cell volume 43 per cent and the erythrocyte count 4.40 million.

The recurring perlèche and atrophy of the tip of the tongue of this patient appeared after the development of a mild anemia of the iron deficiency type; it recurred despite therapy with B vitamins but has remained cured for nine months following the administration of iron. This treatment with iron resulted in a small but definite increase in the concentration of hemoglobin.

Case 6.—E. McN., a Negro woman aged 24, secundigravida, was receiving treatment for syphilis. During her last pregnancy (1941-1942) a single hemoglobin determination was recorded as 10.1 Gm. On Jan. 25, 1944 the patient presented herself with the complaint of lesions at the corners of the mouth for the past two weeks. Crusted, ulcerated lesions were present at the angles of the mouth. A history was given of excessive menstrual bleeding which necessitated bed rest during the past four menstrual periods. The hemoglobin concentration was 8.2 Gm., with an erythrocyte count of 3.80 million. Radioactive iron absorption studies showed an uptake of 34 per cent of a 15 mg. test dose. No therapy was instituted. On February 15 there had been a constant vaginal bleeding for two weeks. The hemoglobin was now 5.7 Gm. and the red cell count was 2.90 million. A second radioactive iron absorption showed a 55 per cent uptake of a 15 mg. dose. On February 24 treatment was instituted with ferrous sulfate 0.3 Gm. three times a day. The hemoglobin rose from 6.0 Gm. on this date to 10.0 Gm. on March 9. On the latter date the perioral lesions were almost healed. On April 13 the patient was completely asymptomatic. On July 25 her hemoglobin was 12.0 Gm. and red blood cell count was 5.0 million. She has experienced no recurrence of the oral lesions.

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[22] Sydenstricker, V. P.; Sebrell, W. H.; Cleckley, H. M., and Kruse, H. D.: The Ocular Manifestations of Ariboflavinosis, J. A. M. A. **114:** 2437 (June 22) 1940.

[23] Murphy, R. G., and Damarjian, E.: Riboflavin Deficiency with Idiopathic Hypochromic Anemia, Rhode Island M. J. **23:** 114 (July) 1940. Sevringhaus and Kybos.[2]

This woman represents an iron deficiency due to excessive blood loss and accompanied by the development of angular fissures. These fissures, as well as the anemia, responded promptly to therapy with iron alone.

COMMENT

The representative cases studied are interpreted as indicating that iron deficiency alone may be manifested by fissures at the labial commissures and a superficial glossitis. Such an interpretation is consistent with the experience of Suzman,[24] who reported 4 cases of Plummer-Vinson's syndrome with such oral lesions which healed rapidly following iron administration. It is of considerable interest that 1 of the cases which he described was treated for eleven days with liver extract No. 343, N. N. R., with no improvement in the oral lesions until iron was added. Furthermore, Waldenström [17] reported 4 cases of such oral lesions accompanying hypochromic anemia which responded to treatment with iron alone. He implied that an additional 4 patients in his series showed similar responses. All of these experiences confirm the conclusion of Waldenström [17] that these lesions of the mucosa and the dysphagia are both cured by sufficient administration of iron with no other therapy.

That these lesions are often confused with the oral signs of B complex deficiencies is evident from the therapeutic measures which were first instituted in most of the cases reported. The records of these individuals cover a sufficient period of time so that there is no doubt of the ineffectiveness of B vitamin preparations and of the efficacy of iron. No relapses during iron therapy have been observed in any of these subjects, in contrast to some of the reported cases of ariboflavinosis.[23] The therapeutic response to iron has been rapid (one to three weeks), again in contrast to the lesions of the tongue attributed to "chronic niacin deficiency." [26] The regeneration of the lingual papillae in iron deficiency has not been influenced by the administration of B complex vitamins.

It is of interest to point out that a number of the cases of glossitis or perlèche which have been reported as yielding slowly to vitamin therapy or of relapsing during or immediately following treatment [25] have been accompanied by anemias of the degrees seen in the cases here reported. Further, on occasions the use of combined iron and vitamin therapy has led to the disappearance of oral lesions, and the success has usually been attributed to the vitamins. Thus, Murphy and Damarjian [23] administered iron and riboflavin to a woman with anemia and cheilosis and ascribed the cure of the angular fissures to the vitamin therapy.

The appearance of the tongue in the cases reported has been somewhat characteristic. The descriptions all indicate a "blotchy, irregular denudation of the papillae," "absence of epithelial tufts" of the filiform papillae and often "dusky red irregular spots." None of these tongues have appeared scarlet like the glossitis of pellagra. It is of interest to compare the tongue depicted in figure 1 with that illustrated by Vinson and Schmidt [11] in a case of Plummer-Vinson syndrome. Both appear swollen with atrophic margins and "dusky spots." In case 1 there was no dysphagia. The bearing of these findings on the etiologic relationship of the oral lesions of the Plummer-Vinson syndrome is obvious. It is unnecessary to regard these signs as manifestations of a secondary vitamin deficiency, as has sometimes been done, but rather they are to be considered as part of the manifestations of iron want unless they fail to respond to adequate doses of iron. Furthermore, cases 1, 4, 5 and 6 reported here and case 11 of Waldenström [17] illustrate that the oral lesions may occur in absence of dysphagia.

It is not my intention to deny that a deficiency of riboflavin, niacin or other B complex factors may and sometimes does give rise to glossitis or cheilosis. Rather, it is emphasized that another cause of these signs is iron deficiency. Stomatitis due to the latter deficiency is now encountered much more frequently in the Vanderbilt Hospital Nutrition Clinic than is riboflavin or niacin deficiency cheilosis and glossitis.

This fact has prompted a study of the correlation of such oral signs occurring within the general adult population and the hemoglobin levels of the population. A composite of data to be published elsewhere tabulated from the results of three separate nutrition surveys [27] suggests that there is a much more frequent association of these signs with low hemoglobin levels than with high hemoglobin levels. Again, this illustrates the unreliability of a single clinical sign as the sole evidence for assessing the nutriture of a population.

SUMMARY

Six cases were observed which illustrate that angular fissures and superficial glossitis may accompany chronic iron deficiency anemia of mild degree. Certain of these cases responded to iron therapy alone; others responded to iron administration after they had failed to yield to prolonged intensive treatment with various B vitamin preparations.

Iron deficiency alone is a common cause of such oral lesions whether or not the lesions are accompanied by the dysphagia of the Plummer-Vinson syndrome.

Iron deficiency should be considered in the interpretation of the significance of such oral changes as are recorded in nutrition surveys.

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[24] Suzman, M. M.: Syndrome of Anemia, Glossitis and Dysphagia, Arch. Int. Med. **51**: 1 (Jan.) 1933.

[25] Sydenstricker, V. P.; Geeslin, L. E.; Templeton, C. M., and Weaver, J. W.: Riboflavin Deficiency in Human Subjects, J. A. M. A. **113**: 1697 (Nov. 4) 1939. Sebrell, W. H., and Butler, R. E.: Riboflavin Deficiency in Man (Ariboflavinosis), Pub. Health Rep. **54**: 2121 (Dec. 1) 1939.

[26] Kruse,[1] Sevringhaus and Kyhos.[2]

[27] Surveys of Alamance County, N. C.,[19] and of two areas in Tennessee. The latter data were made available for study by Col. John B. Youmans.

The Value of Science.—That scientific knowledge can be applied to the material welfare of man is so obvious that no discussion of this value of science is necessary. Those who think that science has other values do not minimize its contributions to the feeding of human beings and their protection from the elements and from ill health. There are those, however, who deny that science has any value apart from these contributions to material welfare. Four grades may be distinguished in the scale of opinion: 1. Science has value only in serving the material wants of man. The only consideration is the material welfare of the community as a whole. This is the extreme totalitarian position. 2. Science has value in serving the material wants of man, but research workers do their best work if they enjoy it. 3. Science has value both in serving the material wants of man and also in enabling people to escape from certain mental evils. The study of science prevents unhappiness consequent on pettiness of outlook and produces forgetfulness of unpleasant memories. This rather negative position is that of Bertrand Russell. 4. Science has another value besides serving the material wants of man and enabling people to escape certain mental evils: it has a positive primary value as an end in itself, like music, art and literature.—Baker, John R.: Science and the Planned State, New York, Macmillan Company, 1945.

THE PROBLEM OF THE DANGEROUS CARRIER OF HEMOLYTIC STREPTOCOCCI

III. The Chemotherapeutic Control of Nasal Carriers

MORTON HAMBURGER Jr., M.D.
Chicago
and
CAPTAIN HENRY M. LEMON
Medical Corps, Army of the United States

The prevalence of epidemics of streptococcic[1] infection in the armed forces during World War II[2] has focused attention on the relation of "dangerous" carriers[3] of hemolytic streptococci to the spread of disease.[4] Exploration of this problem has shown that nasal carriers of these micro-organisms are more likely to transmit infection than throat carriers with negative nose cultures.[5] The reason for this is that the nasal carrier provides a much larger bacterial dosage for the infection of susceptible individuals than does the throat carrier, as demonstrated by quantitative cultures of the environment, including the air.[6] These facts apply equally well to hospitalized patients and to ambulatory carriers in army barracks.[7]

It was therefore important to know whether the nasal carrier state could be eliminated or modified by modern chemotherapeutic agents, for suppression of the dissemination of hemolytic streptococci by carriers would have many practical applications. Moreover, the suppressive action of sulfadiazine on streptococci in the nose would be of interest in an explanation of the mechanism of mass prophylaxis, which has heretofore been interpreted as due solely to the bacteriostatic effect of sulfadiazine in the mucous membranes of susceptible individuals.

The effect of sulfonamides and of penicillin on hemolytic streptococci in the nasopharynx has been described by various investigators,[8] but the significance of nasopharyngeal cultures in carriers is not the same as that of nose cultures.[6] Meads and his associates[9] have reported that penicillin injected at three to four hourly intervals eliminated the nasal carrier state in 3 patients with scarlet fever, though we are not familiar with similar reports dealing with sulfonamides. It is our purpose in this paper to describe our experience with the treatment of both hospitalized and ambulatory nasal carriers of group A streptococci at Fort Lewis, Washington, and Fort Douglas, Utah, with small doses of sulfadiazine or with calcium penicillin suspended in beeswax peanut oil. These preparations are suitable for use with ambulatory as well as hospitalized carriers.

METHODS AND MATERIAL

The following studies were made at the Madigan General Hospital, Fort Lewis, Washington, and in the Basic Training Section, Army Service Forces Training Center, Fort Lewis: Nose and throat cultures were made on soldiers admitted to the hospital with upper respiratory infection and those exhibiting cultures strongly positive for hemolytic streptococci selected for study. Some were treated as described later, while others served as untreated controls. There was no significant clinical difference between the two groups.

In the Basic Training Section nasal carriers of hemolytic streptococci were detected by periodic culture surveys of companies in training. In certain companies, arbitrarily selected, nasal carriers were treated as to be described and in other companies no carriers were treated. In both groups clinical and bacteriologic observations were continued as long as the men remained in their training units.

At Fort Douglas, Utah, sulfadiazine was administered to nasal carriers in an Army Student Training Program unit at the University of Utah in which an epidemic of streptococcic infection was taking place.

Types of Cultures Employed.—Four separate cultures for hemolytic streptococci were made in each hospitalized patient-carrier: (1) "noseblow cultures," (2) determination of the "streptococcus output," a measure of environmental contamination, (3) culture of nose swabs, (4) culture of throat swabs. Only the last two were performed on ambulatory carriers in barracks. A description of these methods follows.

"Noseblow" Cultures.—The number of streptococci expelled by blowing the nose was employed as a quantitative index of the effectiveness of treatment in the hospitalized nasal carriers and was determined in the following manner: The subject blew his nose into a sterile handkerchief and placed it in an Erlenmeyer flask containing 50 cc. of broth. After the flask was

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Valuable technical assistance was rendered by Miss Valerie Hurst, Mrs. Margaret J. Green and Mrs. Ann Thompson.

From the Commission on Airborne Infections, Army Epidemiological Board, Preventive Medicine Service, Office of the Surgeon General, U. S. Army, and the Department of Medicine, University of Chicago.

Lieut. Robert M. Dalrymple, M. C., served as liaison officer for the commission at Fort Douglas, Utah, where some of these investigations were carried out. He contributed much of his time and energy and was solely responsible for the culture surveys made during the period of treatment of carriers at Fort Douglas.

The cooperation of the medical officers at Fort Lewis, Washington, and Fort Douglas made possible the studies herein reported. They were Col. Arthur R. Gaines, commanding officer, Madigan General Hospital, and his successors, Col. W. G. Jenkins and Col Maxwell Keeler; Lieut. Col. R. E. Tennant, executive officer; Col. Edgar Durbin, chief of the medical service; Major Harold Goler, chief of the respiratory disease service; Col. Luther R. Moore, surgeon, Ninth Service Command, Fort Douglas; Col. Irving S. Wright, medical consultant, Ninth Service Command, Lieut. Col. J. W. R. Norton, chief of preventive medicine, Ninth Service Command, Lieut. Col. W. G. Mitchell, commanding officer, Station Hospital, Fort Douglas, Major Lloyd W. Robinson, chief of the medical service, and Lieut. Irving Imber, chief of the labor service

[1] The terms "streptococcus" and "hemolytic streptococcus" in this paper are used to indicate beta hemolytic streptococcus.

[2] Schwentker, F. F.: The Relation Between Scarlet Fever Morbidity and Streptococcus Carrier Rates, Am. J. Hyg. **38**:207-210, 1943. Schwenther, F. F.; Hodes, H. L.; Kingsland, L. C.; Chenoweth, B M, Jr, and Peck, J. L.: Streptococcal Infections in a Naval Training Station, Am J. Pub. Health **33**:1455-1460, 1943. Hamburger, Morton, Jr.; Hilles, Carolyn H.; Hamburger, Virginia G; Johnson, Margaret A., and Wallin, Joanna G.: Ability of Different Types of Hemolytic Streptococci to Produce Scarlet Fever, J. A. M. A. **124**:564-566 (Feb 26) 1944. Holbrook.[28] Prevention of Respiratory Tract Bacterial Infections[28]

[3] The term "carrier" is used to indicate any one who harbors hemolytic streptococcus in the nose or throat, regardless of the presence or absence of active infection.

[4] Coburn, A. F.: The Carrier Problem in the Dissemination of Hemolytic Streptococcus, U. S. Nav. M. Bull. **42**:325-335, 1943. Hamburger.[12]

[5] Hamburger, Morton, Jr.; Green, Margaret Johnson, and Hamburger, Virginia G.: The Problem of the "Dangerous Carrier" of Hemolytic Streptococci: II. Spread of Infection by Individuals with Strongly Positive Nose Cultures Who Expelled Large Numbers of Hemolytic Streptococci, J. Infect. Dis. **77**:96-108, 1945.

[illegible] Morton, Jr.; Green, Margaret Johnson, and Hamburger, [illegible] lem of the "Dangerous Carrier" of Hemolytic [illegible] of Hemolytic Streptococci Expelled by Carriers [illegible] e Nose Cultures, J. Infect. Dis. **77**:68 81, 1945.

[illegible] nd others: Studies on Transmission of Respiratory Disease Within Army Barracks: II. The Air-Borne Spread of Hemolytic Streptococcal Infections Among the Enlisted Personnel, to be published Hamburger and others.[5]

[8] Watson, R. F.; Schwentker, F. F.; Fetherston, J. E., and Rothbard, S.: Sulfadiazine in an Epidemic of Scarlet Fever, J. A. M. A. **122**:730 733 (July 10) 1943. Rubenstein, A. D., and Foley, G. E.: The Effect of Chemotherapy on the Duration of the Carrier State Following Scarlet Fever, New England J. Med. **233**:315-321, 1945. Julianelle, L. A., and Siegel, M [illegible] of Acute Respiratory Infections Conditioned by [illegible] Alterations in the Nasopharyngeal Flora Asso [illegible] Ann. Int. Med **22**:10 20, 1945. Hamburger, M [illegible] e Transmission of Hemolytic Streptococcus Infections: II. Beta Hemolytic Streptococci in the Saliva of Persons with Positive Throat Cultures, J. Inf. Dis **75**:71-78, 1944. Cecil, R. L.; Plummer, Norman, and Smillie, W. G.: Sulfadiazine in Treatment of Common Cold, J. A. M. A. **121**:8-14 (Jan. 1) 1944. Plummer, Norman; Duerschner, D R.; Warren, H. D.; Rogliano, P. T., and Sloan, R. A.: Penicillin Therapy in Hemolytic Streptococci Pharyngitis and Tonsillitis, ibid **127**:369-374 (Feb. 17) 1945. Commission on Acute Respiratory Diseases: A Study of a Food Borne Epidemic of Tonsillitis and Pharyngitis Due to Beta Hemolytic Streptococcus, Type 5. Bull. Johns Hopkins Hosp **77**:143 210 (Sept.) 1945.

[9] Meads, Manson; Flipse, M. Eugene; Barnes, Mildred W., and Finland, Maxwell: Penicillin Treatment of Scarlet Fever, J. A. M. A. **129**:785 789 (Nov. 17) 1945.

shaken for thirty seconds an aliquot was removed for making a blood agar pour plate, which was incubated overnight. The colonies of beta hemolytic streptococci were counted.[10]

"Streptococcus Output."—The "noseblow" culture represented the carrier's potential ability to contaminate his environment.[11] The actual environmental contamination was estimated by a method previously described[6] and consists in pinning or stapling a 5 inch square cotton patch to the bottom sheet of the carrier's bed at the level of the chest and leaving it in place overnight. The next morning the patch is removed and cultured as described under "Noseblow Cultures."

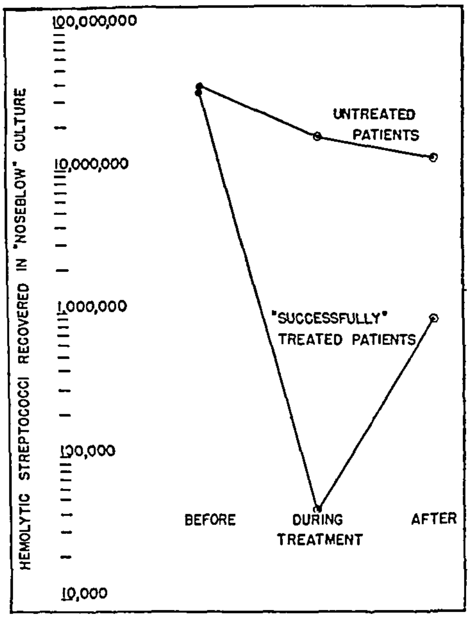

Chart 1—Effect of 1 Gm of sulfadiazine per day on the number of hemolytic streptococci recovered in "noseblow" cultures of hospitalized patient carriers. Treatment was continued for from five to ten days, in most cases six days. In order to compare time periods as fairly as possible, the first to fifth hospital days of untreated patients are plotted on the same ordinate as "before treatment," the sixth to tenth as "during treatment" and the eleventh to fifteenth as "after treatment" Technic of noseblow culture is described in text The curves represent the average of 23 untreated and 22 "successfully" treated patients Note logarithmic scale.

Throat Culture.—A sterile swab was rubbed over the tonsils or tonsillar area and sometimes over the posterior pharynx as well. It was then inoculated directly on to a horse blood agar plate containing 0.1 per cent of para-aminobenzoic acid and the colonies spread with a loop. The plate was incubated for eighteen to twenty hours.

The method of reading plates, described elsewhere in detail,[12] estimates the number of colonies of beta hemolytic streptococci as strongly positive (++++), moderately positive (++) or weakly positive (+).

Nose Culture.—A cotton applicator was inserted gently into the nostril for a distance of 3 to 4 centimeters, rubbed against the mucous membranes and inoculated on to a quadrant or half of a horse blood agar plate. It was not necessary to spread the colonies with a loop. Incubation and reading of plates were the same as for throat cultures. Additional details of the technic have been described elsewhere.[6]

Identification of Beta Hemolytic Streptococci.—Beta hemolytic streptococci recovered before treatment, and when present during and after treatment, were grouped and typed by the method of Swift, Wilson and Lancefield.[13]

Sulfonamide Blood Levels.—The level of free sulfadiazine was determined almost daily in hospitalized carriers and semiweekly in ambulatory carriers. The method of Peters,[14] utilizing capillary blood, was found quite satisfactory for this purpose, when modified to permit the use of only 0.1 cc. of blood. The results obtained by this method correspond closely with those obtained by that of Bratton and Marshall.[15] A photoelectric colorimeter with a suitable filter was used to increase the sensitivity of the para-dimethyl-aminobenzaldehyde color reagent.

RESULTS

Effect of 1 Gm. of Sulfadiazine a Day on the Dispersal of Streptococci by Hospitalized Patient-Carriers.—Twenty-six patients with strongly positive nose cultures for group A streptococci were given 1 Gm. of sulfadiazine a day for five to ten days. The effectiveness of the drug was assessed by daily or nearly daily quantitative noseblow cultures, determination of the "streptococcus output" and nose and throat cultures.

Charts 1 and 2 demonstrate the reduction by sulfadiazine in the number of streptococci expelled by blowing the nose, and in the degree of environmental contamination as indicated by the "streptococcus output," in 22 of the 26 subjects. Moreover, the nose culture (swab) became negative in most but not all these patients in two to five days. It should be pointed out that the bacteriostatic effect was usually not

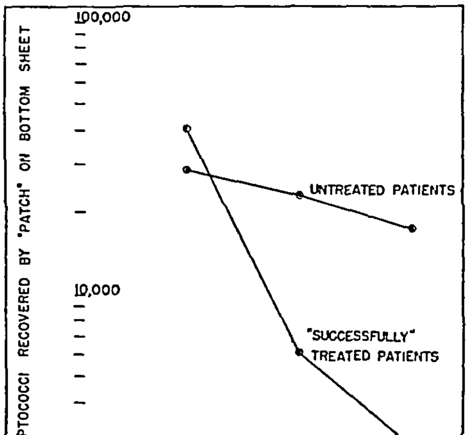

Chart 2—Effect of 1 Gm. of sulfadiazine per day on the environmental contamination produced by patient carriers with strongly positive nose cultures See explanation of chart 1.

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[10] The importance of streptococci expelled by blowing the nose will be discussed in another communication[11]

[11] Hamburger, Morton, Jr., and Green, M. J The Problem of the Dangerous Carrier of Hemolytic Streptococci. IV. Observations on the Role of Blowing the Nose, of the Hands, Sneezing and Coughing in the Dispersal of These Micro Organisms, to be published.

[12] Hamburger, Morton, Jr: Studies on the Transmission of Hemolytic Streptococcus Infections I Cross Infections in Army Hospital Wards, J Infect. Dis 75: 58-70, 1944.

[13] Swift, H. F.; Wilson, A. T, and Lancefield, R. C Typing Group A Hemolytic Streptococci by M Precipitin Reactions in Capillary Pipettes, J. Exper. Med. 78: 127-133, 1943

[14] Peters, J. T.: Easy and Accurate Method for Determination of Blood Sulfonamides from One Drop of Blood from the Finger Tip, J. A. M. A. 124: 31-33 (Jan. 1) 1944.

[15] Bratton, A. C, and Marshall, E. K, Jr: New Coupling Component for Sulfanilamide Determination, J. Biol. Chem 128: 537-550, 1939.

observed until about forty-eight and occasionally seventy-two hours after the first dose. Of the 4 unsuccessfully treated carriers, 2 harbored sulfonamide resistant type 17 streptococci before treatment was started,[16] 1 did not achieve adequate blood levels and the fourth suffered from bilateral maxillary sinusitis.

Two additional points of interest were, first, that the streptococci returned to the nose, usually in relatively small numbers, after the cessation of therapy in 95 per cent of the patients and, second, that the throat culture often remained positive even though the nose culture and noseblow were rendered negative. Typical protocols are presented in table 1.

TABLE 1.—*Sulfadiazine Treatment of Hospitalized Nasal Carriers of Group A Streptococci*

Date 1945	Throat Culture	Culture of Right Nostril	Culture of Left Nostril	Streptococci Recovered from "Patch" on Bottom Sheet	Streptococci Recovered from "Noseblow" Culture	Sulfadiazine, Gm.	Sulfadiazine Blood Level, Mg. per 100 Cc.
Case 1. Type 14 streptococcus, sulfonamide susceptible. Diagnosis, acute follicular tonsillitis, bilateral maxillary sinusitis.							
2/15	+++*	++*	+++	107,000	20,500,000	0	
16	+++	+++	+++	190,000	14,000,000	0	
17	+++	+++	+++	20,000	1,350,000	1	
18	..	..	..	....	....	1	
19	0	+	0	2,500	500	1	2.6
20	0	0	++*	500	0	1	
21	+	0	0	0	1,000	1	
22	0	0	0	1,500	500	1	3.2
23	0	0	0	0	0	0	
24	0	0	0	2,500	0	0	
26	0	0	0	0	0	0	
28	+++*	++*	+	1,500	6,000	0	
3/1	+++	++*	0	500	28,500	0	
2	+++	++	+++	500	3,690,000	0	
5	+++*	0	++*	...	....	0	
March 5, discharged from hospital							
26	+++*	0	0				
Case 2. Type 1 streptococcus, sulfonamide susceptible. *Diagnosis, acute follicular tonsillitis*							
3/28	+++†	+++†	+++	18,500	52,500,000	0	
29	+++	++	+++	6,500	30,000,000	1	
30	+++	+++	+++	1,000	6,500	1	0.9
31	+++†	+++	++†	0	1,500	1	1.4
4/1	+++	0	+	0	0	1	
2	++	0	0	.....	0	1	1.5
3	++	0	0	0	0	1	1.5
4	+++	0	0	1,500	0	0	1.2
5	+	+†	0	.....	..	0	
7	+++	0	0	.....	0	0	
9	+++	0	0	500	0	0	
10	+++†	0	0	...	..	0	
April 10, discharged from hospital							
13	++†	++	++†				
5/11	......	+	+†				
Case 3. Type 17 streptococcus, sulfonamide resistant (to 125 mg. per hundred cubic centimeters, in vitro). Diagnosis, scarlet fever; acute sinusitis; acute otitis media.							
5/22	+	+++	+++	650,000	1,400,000,000	0	
25	+++	+++	+++	....	350,000	6	
29	+++	+++	+++	450,000	210,000,000	6	
31	++	++	+++	65,000	32,000,000	6	
May 22-31, total dose of sulfadiazine, 42 Gm.							
Case 4. Type 14 streptococcus. Diagnosis, acute nasopharyngitis; acute sinusitis (x-ray, not clinical).							
4/18	++	0	+++	0	17,000	0	
19	+++	+++	+++	4,500	25,000,000	0	
21	+++	+++	+++	20,000	22,500,000	0	
24	+++	+++	+++	25,000	....	0	
25	++	++	+++	8,500	10,000,000	0	
26	++	+++	+++	1,500	1,500,000	0	
27	++	+++	+++	3,000	900,000	0	
28	++	++	+++	22,000	13,750,000	0	
30	+++	++	+++	500	49,000,000	0	
5/3	+++	0	+++	1,500	875,000	0	

* A colony from this culture was typed and identified as type 14.
† A colony from this culture was typed and identified as type 1.

Treatment of Ambulatory Nasal Carriers with 1 Gm. of Sulfadiazine per Day.—The assessment of therapy of ambulatory carriers is less satisfactory than that of hospitalized carriers because they are more difficult to control and because observations cannot be made as frequently as in hospitalized persons. The present series includes only men whose noses were swabbed sufficiently often to permit an evaluation of their cultures five days after the first strongly positive nose culture.

Experience in treating nasal carriers where streptococcic disease was epidemic was provided by an outbreak in the spring of 1945 in an Army Student Training Program unit whose personnel was hospitalized at Fort Douglas, Utah. The carriers received 1 Gm. a day for thirty-two days. Here the effectiveness of treatment appeared to be directly related to susceptibility of the organisms to sulfonamide, for 90 per cent of 29 sulfonamide sensitive type 19 strains responded quickly, whereas 83 per cent of 6 sulfonamide resistant type 17 strains failed to respond.[17] The contrast between these type 17 and 19 cultures is illustrated in charts 3 and 4. Not only did the type 17 strains resist the action of sulfadiazine in the carriers, but they actually infected several other individuals, including

TABLE 2.—*Sulfadiazine Treatment of Ambulatory Nasal Carriers of Hemolytic Streptococci at Fort Lewis and Fort Douglas*

	Per Cent of Carriers Whose Nose Cultures Were Negative or + 5 Days After Initial +++ Culture	Average Duration of Treatment, Days	Number of Carriers
Fort Douglas carriers, streptococcus type 19, sulfonamide sensitive	90	32	29
Fort Douglas carriers, streptococcus type 17, sulfonamide resistant	17	32	6
Fort Lewis carriers, streptococcus types 1, 3, 6, 11, 12, 14, 17, 19, sulfonamide sensitive	68	23	19
Fort Lewis carriers, untreated	34	0	29

The sulfonamide sensitivity refers to tests of strains recovered prior to treatment.

TABLE 3.—*Nose Culture Relapse Rate of Sulfadiazine Treated Hospitalized Patient-Carriers and Ambulatory Carriers at Fort Lewis*

	Average Duration of Treatment, Days	Sulfadiazine per Day; Gm.	Relapse Rate, per Cent	Number of Subjects
Hospitalized patient carriers	7	1	95	22
Ambulatory carriers	23	1	23	13

TABLE 4.—*Sulfadiazine Blood Levels of Carriers Treated at Fort Lewis and Fort Douglas*

	Milligrams per 100 Cc.	
	Average	Range
Fort Lewis, hospitalized	1.31	0.2-5.5
Fort Lewis, ambulatory	1.76	0.3-5.3
Fort Douglas, ambulatory	2.3	Trace-3.4

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[16] Another carrier of sulfonamide resistant (before treatment) type 17 streptococci, who produced as great environmental contamination as we have ever observed, was treated with 6 Gm. of sulfadiazine per day (table 1). He continued to disperse great numbers of type 17 streptococci and infected four nearby patients with this organism.

[17] The sulfonamide sensitivity of these strains was tested in vitro by the method of A. T. Wilson (Method for Testing in Vitro Resistance of Group A Hemolytic Streptococci to Sulfonamides, Proc. Soc. Exper. Biol. & Med. 58: 130-133, 1945), and in tryptose phosphate broth enriched with horse serum. These studies will be reported elsewhere.

successfully treated carriers of type 19 who were still receiving the drug.

At Fort Lewis, where streptococcic disease was not epidemic, carriers were detected by periodic surveys.

Table 5.—*Levels of Penicillin in Blood Serum Following a Single Intramuscular Injection of 300,000 Units in Beeswax Peanut Oil: Reports of Various Investigators*

Investigators	Oxford Units Per Cc. of Serum at Different Times After Injection of Penicillin: 12 Hours	24 Hours	Number of Cases
Nichols and Hounz[22]	0.18	0.03	8
Romansky and Rittman[21]	0.039-0.625	0.000-0.625	87
Kirby and others[20]	0-0.2	0	54

Sixty-eight per cent of 19 treated carriers exhibited negative or very weakly positive nose cultures by the end of five days, as contrasted with 34 per cent of 29 untreated carriers who underwent spontaneous remissions during that time. The data on the ambulatory carriers are summarized in table 2.

Nose Culture Relapses in Sulfadiazine Treated Carriers.—When treament was discontinued after five to ten days, as was done with the hospitalized patient-carriers, the relapse rate was very high, 95 per cent, as contrasted with 23 per cent in the ambulatory carriers treated for an average of twenty-three days. These data are summarized in table 3.

Much of this difference may be due to the duration of treatment, since a similarly high relapse rate was seen in several ambulatory nasal carriers in whom treatment terminated after a few days.

Follow-up data after the cessation of treatment were not available on the Fort Douglas men.

Sulfadiazine Blood Levels.—Levels were determined on hospitalized men every one to three days and on ambulatory carriers once or twice a week. The average levels are presented in table 4.

Toxic Reactions to Sulfadiazine.—Untoward reactions were uncommon. The only objective reaction was the appearance of a morbilliform rash in 3 of the ambulatory carriers at Fort Lewis and Fort Douglas. Two men complained of feeling tired while taking the drug.

Table 6.—*Hospitalized Nasal Carriers Treated with Calcium Penicillin in Beeswax Peanut Oil*

No.	Diagnosis and Streptococcus Type	Days in Hospital Before Treatment	Total Dose, Oxford Units	Streptococci Recovered in Nose Blow Culture*: Before	During Treatment	After	Streptococcus Output†: Before	During Treatment	After	Nose Culture: Before	During Treatment	After	Throat Culture: Before	During Treatment	After
1	Tonsillitis; sinusitis (x-ray) (36)	14	1,200,000	74,000,000	0	0	43,500	500	0	+++	0	0	+++	0	0
2	Tonsillitis (19)	8	1,500,000	5,423,000	0	0	22,000	0	0	+++	0	0	+++	0	0
3	Tonsillitis (1)	4	1,500,000	1,900,000	0	0	1,000	0	0	+++	0	0	+++	0	0
4	Pharyngitis (14)	4	1,260,000	25,900,000	0	0	4,500	0	0	+++	0	0	+++	0	0
5	Acute sinusitis (36)	5	1,500,000	6,950,000	3,300	0	5,050	0	0	+++	+ 0	0	+++	0	0
6	Acute sinusitis; acute otitis media (17)	10	1,980,000	72,500,000	100	0	187,500	2,500	0	+++	0	0	+++	0	+++
7	Tonsillitis; sinusitis (6)	4	1,500,000	933,000	1,500	0	272,500	26,500	0	+++	++ 0	0	+++	0	0
8	Tonsillitis (17)	11	1,500,000	50,000,000	100	0	125,000	500	0	+++	0	0	+ ++	0	0
9	Acute sinusitis (6)	3	1,500,000	50,000,000	100	720,000	1,000	0	10,000	+++	+ 0	+++	+++	+ 0	+++
10	Pharyngitis; acute sinusitis (19)	5	2,100,000	2,850,000	0	13,000	65,000	0	0	+++	0	+++	+++	0	+++
11	Tonsillitis; sinusitis (x-ray); scarlet fever (17)	13	1,350,000	76,500,000	0	470,000	750,000	0	500	+++	0	+++	+++	0	+++
12	Pharyngitis (19)	6	1,500,000	658,000	3,200	32,400	65,500	14,000	6,500	+++	0	++	+++	0	+++
13	Tonsillitis; sinusitis; scarlet fever (3)	3	1,400,000	512,500,000	200	430,600	52,500	8,000	30,000	+++	0	+++	+++	0	+++
14	Pharyngitis (12)	4	1,800,000	1,332,000	3,600	575,500	38,000	1,000	500	+++	++ 0	+++	+++	0	+++

* Nose blow cultures are expressed as the average of several cultures made in the before, during and after treatment periods.
† The streptococcus output is the number of streptococci recovered by the highest of several patches cultured in the before, during and after periods.

The Effect of Calcium Penicillin in Beeswax Peanut Oil.—Though the action of penicillin on hemolytic streptococci is very rapid, the necessity of injections every three to four hours has rendered its use impracticable in the treatment of ambulatory carriers; but the recent development of a suspension which is so slowly absorbed from the tissues [18] that only one injection a day may be necessary suggested a trial of this material. Accordingly, two lots of calcium penicillin suspended in 4.8 per cent beeswax by weight in peanut oil were sent us by Capt. Monroe J. Romansky of the Army Medical School. Each cubic centimeter contained 300,000 units of penicillin.

Though the treatment of both ambulatory and hospitalized carriers is the ultimate goal in the use of this material, the clinical trials were conducted on hospitalized carriers because daily careful observation was deemed important. The 14 subjects were divided into two groups: 7 patients still acutely ill and 7 ambulatory patients detained past the time when the ward officer would have discharged them. The latter served as true examples of postinfection healthy carriers. Though the number of cases in the series is small, they illustrate the advantages and shortcomings of this preparation.

One cc. was injected daily into the deep muscles of the upper outer quadrant of the buttock on alternate sides each day. Ten men received five daily injections, 2 men six and 2 men seven. Twelve of the 14 subjects experienced but slight discomfort in the buttock and stated that they believed they could perform full duty while under treatment. One of the other two experienced severe pain along the leg for several hours, and one man complained of severe pain and tenderness at the site of injection lasting nearly twenty-four hours.

The bacteriologic study followed the plan of the patients treated with sulfadiazine, and the findings are summarized in table 5. The immediate results were dramatic. In every case the streptococci in the "noseblow" culture [19] were either eliminated or diminished by more than 98 per cent after the first injection of penicillin. The nose and throat swab cultures and the "streptococcus output" followed the same pattern.

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[18] Romansky, M. J., and Rittman, G. E.: A Method of Prolonging the Action of Penicillin, Science **100:** 196-198, 1944.

[19] Penicillinase 2,500 units, supplied by Captain Romansky and Dr. A. J. Liebmann of the Schenley Laboratories, was added to the flask containing the "noseblow" material to inactivate any penicillin which might have been carried over in the nasal secretion. The flask was incubated at 37 C. for fifteen minutes before an aliquot was removed for making a pour plate.

Blood levels were not measured, though the bacteriologic results suggest that absorption may have been irregular in some cases. The levels encountered by other investigators using this preparation have varied considerably, however, and are summarized in table 6. The most striking difference between two large well studied series was the finding in one [20] that no penicillin could be demonstrated in the blood serum twenty-four hours after the intramuscular injection of 1 cc. of 300,000 units of calcium penicillin in beeswax peanut oil, whereas bactericidal concentrations were detected in most patients in the other series.[21] Bactericidal concentrations were demonstrated at the end of twenty-four hours in a third small group of cases,[22] but the method employed for measuring blood levels differed from that used in the two larger series.

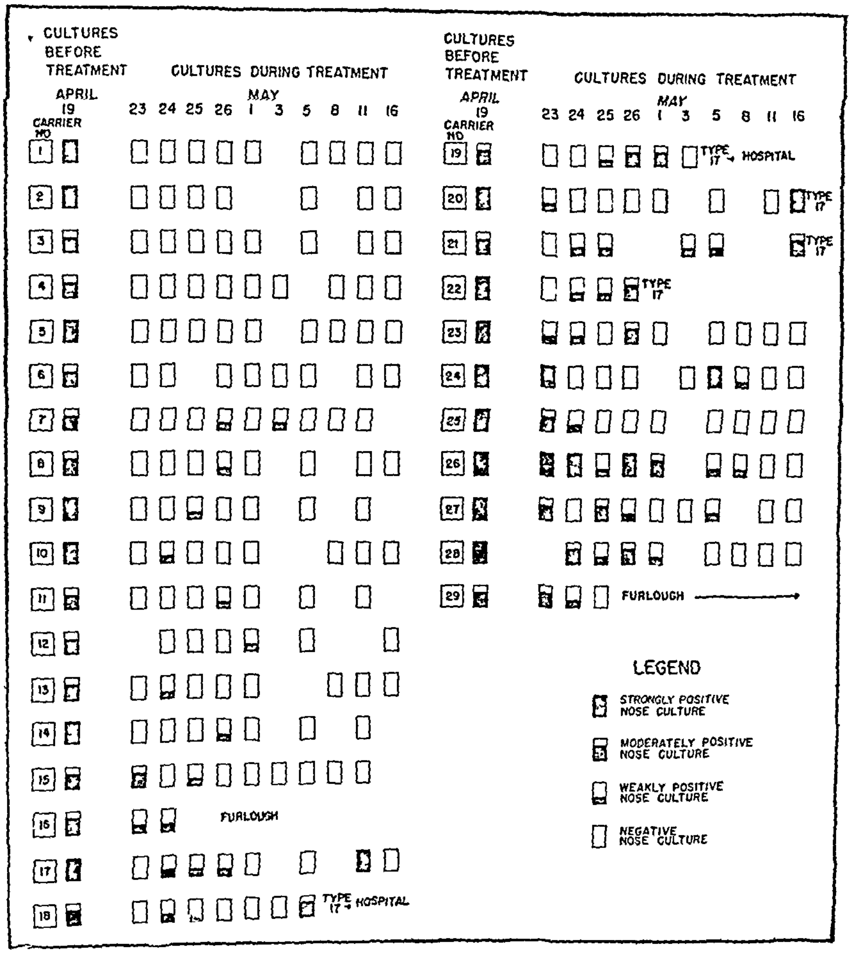

Chart 3.—Effect of 1 Gm. of sulfadiazine per day on the nose culture of ambulatory carriers of type 19 streptococci. These strains were susceptible to sulfadiazine in vitro Note that several carriers became infected with sulfonamide resistant type 17 streptococci while they were still receiving sulfadiazine.

Relapses Following Penicillin.—In 7 of the 14 carriers the noseblow, nose culture, throat culture and streptococcus output remained entirely negative for follow-up periods of eleven to seventy-two days after the last injection. In other words, the carrier state was effectively and probably permanently eradicated. One carrier suffered a relapse of his throat culture seventeen days after the cessation of treatment, but his nose remained free from streptococci.

Relapses of nose culture, noseblow and throat culture occurred in the remaining 6 carriers within one to five days after the last injection of penicillin, though only 2 dispersed many streptococci into the environment. It was of course important to analyze as far as possible the reasons for these relapses. Because of the equal distribution of certain factors among the carriers who did and who did not relapse, these factors could be ruled out as at least constant sources of failure. They were (1) streptococcus type, (2) presence or absence of sinusitis, (3) total dose of penicillin, 2 men receiving 2,100,000 and 1,800,000 units being among the failures, (4) duration of positive culture before treatment, (5) presence of tonsils and (6) sensitivity of the streptococci to penicillin.[23] Unfortunately, the absence of penicillin blood levels renders it impossible to say whether absorption was always adequate.

COMMENT

The primary aim in the treatment of carriers of any pathogenic microorganism is the complete eradication of the carrier state. When this cannot be accomplished, as is often the case, the next goal is to render the carrier as harmless as possible.

The prompt and lasting elimination of all hemolytic streptococci from the nose and throat of a carrier can be effected in many cases by penicillin in beeswax peanut oil injected once a day for five to seven days. Moreover, the majority of those carriers who relapsed after termination of treatment failed to disperse large numbers of streptococci into the environment. Therefore a method is now available for controlling well over half the dangerous carriers in event of an epidemic. Furthermore, if the cause of relapse in certain cases in the present series was inadequate absorption of penicillin, as suggested by the studies of Kirby and his associates,[20] an increase in dosage may offer hope of a substantial augmentation of the number of individuals in whom the carrier state is completely eradicated. Their data suggest also that subcutaneous administration of 300,000 units in beeswax peanut oil may provide adequate blood levels. However, since the levels achieved by this group after intramuscular injection are considerably lower than those reported by Romansky and Rittman [21] the problem obviously needs further investigation. Finally, the prompt suppression of the carrier state, associated with considerable reduction in the dispersal of streptococci into the environment of every treated carrier, is significant, even though relapses often occur.

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[20] Kirby, W. M. M.; Leifer, William; Martin, S. P.; Rammelkamp, C. H., and Kinsman, J. Murray: Intramuscular and Subcutaneous Administration of Penicillin in Beeswax-Peanut Oil, J. A. M. A. **129:** 940-944 (Dec. 1) 1945.

[21] Romansky, M. J., and Rittman, G. E.: Penicillin Blood Levels for Twenty-Four Hours Following a Single Intramuscular Injection of Calcium Penicillin in Beeswax and Peanut Oil, New England J. Med. **233:** 577-582, 1945.

[22] Nichols, D. R., and Haunz, E. A.: Prolonged Action of Penicillin in Mixtures of Beeswax and Peanut Oil, Proc. Staff Meet., Mayo Clin. **20:** 403-407 (Oct. 31) 1945.

[23] The in vitro sensitivity to penicillin of strains recovered from 3 patients after relapse and of two strains recovered before treatment from patients who did not suffer relapse was tested by Mrs. Lida H. Mattman by a simple unpublished method developed in the laboratory of the Harrison Department of Surgical Research, University of Pennsylvania School of Medicine. The penicillin sensitivity of all of these five strains was the same.

In view of the efficacy of penicillin and the appearance of epidemics of sulfadiazine resistant streptococcic disease following mass sulfonamide prophylaxis,[24] the circumstances under which sulfonamide treatment of nasal carriers may be advisable must await further experience. It is possible that, in small groups where penicillin may not be available, nasal carriers of sulfonamide susceptible hemolytic streptococci may be profitably given sulfadiazine for three to four weeks. This can apparently be done without danger of sensitizing the patient.[25]

The role played by sulfadiazine given as mass prophylaxis in preventing the dissemination of hemolytic streptococci from nasal carriers is of interest in considering the mechanism of the initial success of the programs carried out by the Navy and the Air Forces in 1944.[26] Though it has been well recognized that sulfonamide drugs fail to eliminate streptococci from the throats of most carriers,[8] there has heretofore been no information concerning their effect on the dispersal of streptococci from the upper respiratory tract. The results reported in this paper suggest that sulfadiazine, in addition to creating in susceptible hosts an environment unfavorable to the implantation of sulfonamide sensitive streptococci, also hinders their dissemination by dangerous carriers. Moreover, the failure of sulfadiazine to reduce environmental contamination resulting from carriers of sulfonamide resistant strains could explain the ultimate replacement of sensitive by resistant strains in the treated population.

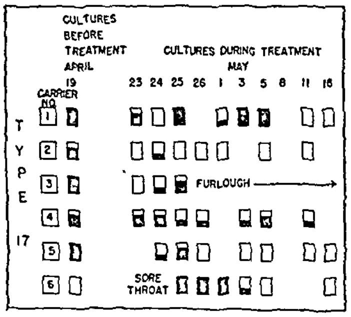

Chart 4.—Lack of effect of 1 Gm. of sulfadiazine per day on the nose culture of ambulatory carriers of type 17 streptococci. All these strains were resistant to sulfadiazine in vitro. See legend of chart 3.

SUMMARY

1. The effect of sulfadiazine and of slowly absorbed penicillin on group A hemolytic streptococci in the nose of carriers and on their dispersal into the environment has been investigated.

2. One Gm. of sulfadiazine a day eliminated or reduced the numbers of sulfonamide sensitive streptococci in the nose and inhibited the dispersal of these organisms into the environment in about 80 per cent of cases. It was ineffective against sulfonamide resistant streptococci.

Streptococci of the same serologic type reappeared in the nose after the cessation of treatment in 95 per cent of carriers treated for five to ten days but in only 23 per cent of carriers treated for an average of twenty-three days.

3. The inhibitory effect of "prophylactic doses" of sulfadiazine on the dispersal of sulfonamide susceptible streptococci by carriers suggests that a direct effect on the carrier state probably played an important role in the initial success of the mass prophylaxis of streptococcic disease carried out by the Navy and Air Forces in 1944.

4. Calcium penicillin in beeswax peanut oil was administered to 14 carriers in a dosage of 300,000 units in 1 cc. a day intramuscularly for five to seven days. Prompt and permanent eradication of both nose and throat carrier state and of the dispersal of hemolytic streptococci occurred in 50 per cent of these carriers. In the other 50 per cent streptococci were eliminated or reduced by more than 98 per cent in number during the administration of the penicillin, though relapse took place after it was terminated. Most of the carriers in whom relapse occurred dispersed very few streptococci into their environment.

5. Calcium penicillin in beeswax peanut oil can be administered to most ambulatory carriers in daily 1 cc. doses intramuscularly without interference with their normal activities.

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[24] Sulfadiazine Resistant Strains of Beta Hemolytic Streptococci: Appearance During the Course of Sulfadiazine Prophylaxis at a Large Naval Training Center, Epidemiology Unit Number 22, J. A. M. A. **129:** 921-927 (Dec. 1) 1945.

[25] Coburn, A. F.: Mass Sulfadiazine Prophylaxis of Respiratory Diseases in the U. S. Navy, Bull. New York Acad. Med. **21:** 281-301, 1945.

[26] Prevention of Respiratory Tract Bacterial Infections by Sulfadiazine Prophylaxis in the United States Navy, United States Navy Department, Bureau of Medicine and Surgery, 1945. Holbrook, W. P.: The Army Air Forces Rheumatic Fever Control Program, J. A. M. A. **126:** 84-87 (Sept. 9) 1944.

NONOPERATIVE TREATMENT OF OSTEOMYELITIS WITH PENICILLIN

EDWIN J. GRACE, M.D.
Brooklyn
and
VERNON BRYSON, Ph.D.
New York

In a preliminary report[1] the advantages of treating chronic osteomyelitis with penicillin and a wetting agent (sodium tetradecyl sulfate) were presented. Seven of the most severe cases that have been observed since publication of our earlier report will now be reviewed by way of confirmatory evidence on the soundness of the procedure.

At the present time, results obtained by nonoperative treatment of chronic osteomyelitis appear to justify further comment on this simple therapeutic program, particularly since three of our large military hospitals have recently reported a series of cases in which the topical principle of therapy has been neglected in favor of more radical methods.

Never in all history have we been confronted with mutilation of the magnitude now seen, not only here but throughout the world. An enormous number of these tragic casualties are suffering from chronic osteomyelitis and face a hopeless future of invalidism. To date all known methods of surgical treatment have often been inadequate and amputation must be performed in some cases. Confronted by this fact, it is imperative that the surgeon reexamine the status of accepted practices used in treating the disease.

The medical profession is at present represented by two opposing points of view concerning the basic course to be followed in dealing with the patient with chronic osteomyelitis: One group may be described as the exponent of radical surgery and represents the majority trend in military medicine. Essentially the method advocated consists in extensive saucerization of the affected region, with an attempt to remove mechanically

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From the Grace Clinic, Brooklyn (Dr. Grace) and the Biological Laboratory, Cold Spring Harbor, L. I., N. Y. (Dr. Bryson).

[1] Grace, E. J., and Bryson, Vernon, Topical Use of Concentrated Penicillin in Surface-Active Solution, Arch. Surg. **50:** 219 (April) 1945.

all possible infective foci. Skin grafting may be employed and becomes almost a necessity when the excision of bone and muscle has resulted in a wide area of exposure.[2] The resultant cosmetic effect, even when there is no impairment of function, should hardly receive the unqualified endorsement of individuals on whom such operations are performed. Yet to the surgeon the arrest of osteomyelitis may be regarded as evidence of success, regardless of prolonged hospitalization and possible mutilation attendant on the method.

According to another point of view, as held by us and a minority of others, primary reliance in treating chronic osteomyelitis should be placed on chemotherapy, with surgical intervention reduced to a minimum compatible with successful treatment. The word of Anderson and his associates[3] supports the contention that a favorable outcome may usually be anticipated when a program of penicillin therapy is combined with conservative surgery. Our own studies with penicillin-detergent combinations are designed to eliminate, by means of the detergent, the isolation of penicillin-susceptible bacteria in sequestrums, sclerosed bone, abscesses, poorly vascularized sinus tracts and soft tissue scars. It then becomes possible to eliminate concurrently the bacteria themselves, utilizing the antibacterial properties of penicillin as enhanced by the presence of the detergent. Experiments now in progress show that the familiar stimulation of the bacterial properties of antiseptics in the presence of detergents[4] is also noted in combinations of penicillin with the wetting agents that we have used. A report of this work will be published elsewhere.

No complete judgment of the efficacy of penicillin-detergent combinations can be made until time has elapsed and the percentage of recurrent infections is tabulated. Yet one must remember that surgery alone is too often merely palliative and the spectacle of a patient with a history of from forty to fifty operations is not unusual. Therefore it would seem that the use of chemotherapy, a conservative and nonmutilating treatment, should be made the method of first choice in treating our war wounded, even though in some cases it may not prove to be ultimately successful. Where failures or relapses occur there is still time enough for the prolonged hospitalization and possible disfigurement attendant on saucerization and the inevitable removal of some healthy tissue. In the meantime our limited experience suggests that the employment of penicillin with a wetting agent is well suited for the nonoperative treatment of chronic osteomyelitis and deserves wider attention when considered in conjunction with the inadequacies of accepted surgical practice.

THERAPEUTIC PROGRAM IN CASE REPORTS

Unless noted, the plan of therapy in all of these cases has been essentially the same: First, a complete physical examination with correction of obvious deficiencies such as anemia and focal infection. The latter we feel is vital and no therapy is undertaken until all dental sepsis, such as devitalized teeth or apical infection, has been removed; all cavities must likewise be filled. Tonsils are removed in every case in which they appear infected clinically or if this is advised by the otolaryngologist. In the male, infection of the prostate is often a factor, and in some of our more advanced cases of osteomyelitis we have encountered previously unrecognized cases of prostatic infection.

After these preliminary steps have been carried out the patient is hospitalized for ten days and during this period he receives penicillin as follows: Injections of approximately 3 cc. (more or less depending on the size of the sinus) of a solution made up of 200,000 units of penicillin dissolved in 25 cc. of a wetting agent (Aerosol O. T. or sodium tetradecyl sulfate 0.1 per cent) into each sinus every three hours. Appropriate needles must be used to follow the sinus tract to the infected area of bone and an effort must be made to flood the solution into the diseased area. This is supplemented by intramuscular injections of 20,000 units every three hours for the first four doses and then 10,000 units every three hours. The medication is continued regularly night and day throughout the period of hospitalization.

In some cases now under treatment we have increased the topical application to 20,000 units per cubic centimeter or 1 million units per 50 cc. We do not allow more than 25 or 50 cc. of the penicillin and wetting agent to be prepared at a time in order to insure a fresh solution and prevent deterioration of the penicillin.

REPORT OF CASES

In an earlier publication[1] we reported a case in which chronic osteomyelitis with a chronic purulent discharge had been present for nine years. The discharge has not reappeared since treatment with penicillin and the detergent. This now represents an eleven month follow-up.

Case 1.—A man aged 39, a delivery man, first seen at the Grace Clinic on July 24, 1945, presented the complaint of chronic osteomyelitis. In 1921 he had been injured in a basketball game and had developed osteomyelitis of the left tibia. After one year this cleared up and remained so until 1938, when he had a recurrence which lasted for five months. It broke down again in 1941 and he was ill for three months. Since this time he has had recurrent breakdowns of the wound at intervals of about three months. He has had seven surgical procedures performed on this leg to date. There have been no other complaints.

The skin over the left tibia was red and inflamed, with dense scar tissue from previous surgical operations. There was a sinus at the upper end of the left lower leg extending to the bone. The inguinal and femoral glands on the left were enlarged, grade 3 (on the basis of 4). The prostate was normal.

X-ray examination of the left tibia, July 24, 1945, showed chronic osteomyelitis of the shaft. Dental x-rays disclosed the mouth to be negative for periapical foci. There was grade 2 alveolar resorption in the upper left first molar area with pyorrhea pockets as well as grade 1 alveolar resorption about the lower anteriors. There was extensive caries in the upper right cuspid. A culture of material from the sinus in the left leg revealed the presence of hemolytic Staphylococcus aureus predominating.

The patient was referred to his dentist for treatment and then admitted to the hospital, Aug. 8, 1945 for penicillin therapy. A culture was taken from the sinus on August 18 and was sterile at the end of twenty-four and ninety-six hours. After a twelve day period of hospitalization he was discharged and the sinus appeared to be entirely healed. A protective dressing was applied and one week later, August 27, he was allowed to resume his normal activities. He was last seen by us on Oct. 9, 1945 and there had been no evidence of recurrence.

Case 2.—A man aged 37 with chronic osteomyelitis of both arms and legs was first known to us on June 4, 1945. Following an injury to his right knee in 1941 he had developed ostemyelitis in the right tibia, the left femur and fibula and the humeri. He had been hospitalized on numerous occasions and had undergone a total of forty-seven surgical procedures for this condition. (This represents the greatest number of operations for any patient in this series.)

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[2] Kelly, R. P.; Rosati, L. M., and Murray, R. A.: Traumatic Osteomyelitis: The Use of Skin Grafts—Part I, Ann. Surg. **122:** 1 (July) 1945.

[3] Anderson, D. G.; Howard, L. G., and Rammelkamp, C. H.: Penicillin in the Treatment of Chronic Osteomyelitis, Arch. Surg. **49:** 245 (Oct.) 1944.

[4] Petroff, S. A., and Schain, P.: The Enhancement of Bactericidal Properties of Well Known Antiseptics by Means of Detergents, Quart. Bull. Sea View Hosp. **5:** 372 (July) 1940.

Examination revealed a foul, irregular, ulcerating area of exposed bone, approximately 2 by 4 cm., over the anterior surface of the right tibia. Pus was draining freely from a sinus on the left thigh. There was moderate tenderness of the right shoulder, and the patient stated that in the past such tenderness had invariably indicated a breakdown.

X-ray examinations on June 5 revealed chronic osteomyelitis of the lower half of the posterior and mesial surfaces of the right tibia, chronic osteomyelitis of the lower half of the left fibula, chronic osteitis and osteomyelitis in the midportion of the left femur with some apparent activity on the anterior surface, chronic osteitis involving the shaft of the left humerus and early periostitis and medullary widening of the middle third of the shaft of the right humerus probably indicative of early activity. Dental x-rays showed no periapical foci. There were periodontal lesions, grades 2 to 4, with alveolar resorption and caries. Cultures taken from each leg on June 7 showed Staphylococcus aureus, moderately hemolytic and moderately pigmented.

The patient was hospitalized for penicillin therapy on June 17, after the dental sepsis had been eliminated. When he was discharged on July 6 each sinus was 95 per cent closed and the discharge decreased in like proportion. Wet tyrothricin dressings with compression bandages were applied to the wound on the left thigh, and the thin, watery discharge gradually dried up altogether. The area of exposed bone on the lower part of the right leg was treated in the same way, and this healed promptly. It has remained covered and dry since. A culture of the thin discharge from the left femur, taken August 3, revealed a very scant growth of Staphylococcus albus, one colony being slightly hemolytic. On August 9 additional material was obtained for culture by injecting a needle deeply into the sinus, which was apparently healed and a direct smear was negative. Cultures of September 11 were reported as negative after seventy-two hours.

In this, as well as in other similar cases with long sinuses extending from the skin to the bone, we attribute the slowness in healing to fibrosis between the skin and the bone. They respond well to wet tyrothricin dressings and compression bandages.

Case 3.—A man aged 32, a dental laboratory technician, first seen by us June 22, 1945, fell in 1925, injuring his right hip. A few days later he developed scarlet fever and two weeks later the right hip became stiff. He was then hospitalized and treated with traction and casts for a period of eight months. He left the hospital with a deformity of the right hip and has had recurrent bouts of pain and fever since. In 1930 he had an operation to correct the deformity, and this procedure was followed by more traction and casts. The wound drained for a few months, then healed and remained closed for three years. Since then (1933) however there has been intermittent drainage. An osteotomy was done in 1942.

Examination revealed an old operative scar 20 cm. in length over the right hip. In the upper portion of this scar, directly over the greater trocanter of the right femur, there was a deep, draining sinus 5 cm. in length which could easily be probed to the bone. There was a slight discharge from the left ear, which the patient stated he had had since the age of 10 years. The tonsils appeared to be infected, grade 2, but there was no history of tonsillar sepsis. The prostate was slightly indurated and irregular.

X-ray examination of the right hip June 28 demonstrated complete fusion of the hip joint, probably the result of old osteomyelitis. The dental x-rays disclosed alveolar resorption and periodontal foci, grades 2 to 3, and caries, grade 4. A prostatic smear revealed a few white blood cells with no clumps. Culture of the material from the draining sinus, taken before therapy was instituted, showed hemolytic Staphylococcus aureus with golden pigmentation and good hemolysis at forty-eight hours.

The dental work was attended to and the patient was hospitalized on August 20. He received 8,000 units of calcium penicillin to 1 cc. of the Aerosol O. T. 0.1 per cent in the topical application. Cultures taken eight and ten days respectively after treatment started remained sterile at ninety-six hours. When he left the hospital, September 2, the sinus tract was healed and dry and has remained so. He was last seen on Oct. 5, 1945. It is interesting to note that he no longer complains of discomfort in the affected area during damp weather.

Case 4.—A schoolgirl aged 17 years, who had osteomyelitis of the left hip for eleven years, was first examined at the clinic on June 11, 1945. She presented a history of severe mastoiditis at the age of 6 years on the right side, which required mastoidectomy, and immediately after operation she developed pain in the left hip. In the eleven years since this episode she had undergone twelve surgical operations and there had been a persistent draining sinus which closed intermittently. At one period it remained closed for seventeen months. However, for the past seven months there had been constant drainage.

Examination revealed scars on the left groin and the outer surface of the left hip. There was a draining sinus in the upper third of the anterolateral surface of the left thigh. The pelvis was rotated, with a spinal curvature compensating for 1¼ inch shortening of the left leg. The left thigh was smaller, grade 2, than the right, and the left inguinal glands were enlarged, also grade 2. Except for dental sepsis, examination was otherwise negative.

The dental x-rays showed a retained root fragment and one crowned tooth of questionable vitality; there was interproximal caries, grades 1 and 2. X-ray examination of the left hip demonstrated complete destruction of the joint, including the head and neck of the femur. There was solid bony ankylosis of the upper shaft and acetabulum. A culture of material from the sinus taken on the date of her first visit revealed Staphylococcus aureus, slightly pigmented and moderately hemolytic, and Streptococcus pyogenes.

The patient was given liver, vitamin B and iron therapy to correct a mild anemia (hemoglobin 11.7 Gm. per hundred cubic centimeters, or 78 per cent) and referred to her dentist for elimination of the dental sepsis. The dental work completed, she was hospitalized on August 30 and received the usual therapy except that 8,000 units of calcium penicillin was used to 1 cc. of the wetting agent for the local application. In order to increase the efficacy of the penicillin an opening about 3 cm. was made at the upper end of the sinus tract in the left thigh about 18 cm. from the lower end of the tract to enable the solution to enter the infected area more directly.

Culture of material from each sinus taken two days before discharge from the hospital revealed Escherichia coli, a few staphylococci, no hemolysis and no pigment. When she left the hospital on Sept. 15, 1945 the sinuses were closed, although the upper one was slightly inflamed. Wet tyrothricin dressings with compression were applied to this area, which cleared up within five days.

Case 5.—A bedridden man aged 70 was referred to our care and hospitalized on Aug. 26, 1945 for penicillin treatment of chronic osteomyelitis. In February 1934 he had developed pneumonia with subsequent persistent low grade fever. The right hip became inflamed, and incision and drainage were done. The right hip continued to drain, and in 1935 he was again hospitalized and operation was carried out. There were apparently multiple sinuses in the area of the upper part of the right leg, and the drainage continued to be almost constant. He had failed to respond to sulfonamide treatment.

X-ray of the pelvis and the right hip on August 27 disclosed the left half of the pelvis intact. The left hip joint showed no pathologic condition. The sacroiliac joints were not abnormal. The right femoral head and neck showed considerable decrease in size. The acetabulum was fairly well developed but high in position. The head and the femoral neck, although decreased in size, showed smooth borders. There was moderate increase in density in the ilium and ischium, in the acetabular region and also in the wing of the ilium. There were suggestive areas of bone destruction, particularly in the lateral region. The superior border of the acetabulum showed some hypertrophic changes. There was moderate soft parts swelling about the hip region. Moderate arterial calcification was present. A culture taken from a sinus on August 28 revealed gram negative bacilli, coli group; also diphtheroids. This patient also received 8,000 units of the calcium penicillin to 1 cc. of the wetting agent for the topical application. Another culture taken on September 13 was sterile at twenty-four and ninety-six hours. The patient was discharged on September 13 and the sinuses have remained dry since.

The bacteriologic findings show that the organisms present here were penicillin resistant and therefore, on the basis of these findings alone, penicillin therapy would not have been indicated. The clinical effects obtained may have been due to the interaction of the penicillin and the detergent on the bacterial cell.

Case 6.—A woman aged 27, a secretary, first seen by us on June 19, 1945, developed acute osteomyelitis of the left tibia following an injury at the age of 8 years and had suffered a draining sinus in this area since. During this interval she had undergone nineteen surgical operations. The patient was obese and stated that she had frequent sore throats. Her general condition was otherwise satisfactory.

Examination revealed operative scars over the entire length of the anterior tibia on the left leg with two sinuses, one about 1 mm. and the second about 2 by 1.5 cm. in diameter, about 5 cm. below the patella on the inner aspect. There was an area of ulceration about the sinuses. There was evidence of tonsillar and dental sepsis.

X-ray examination of the left tibia on June 20 showed chronic osteomyelitis at the upper half. Dental x-rays confirmed the presence of grade 4 (basis 4) caries. A culture taken on June 20 of material from the sinus revealed a heavy growth of beta hemolytic streptococci and some Pseudomonas pyocyanea organisms.

The patient was referred to her dentist, tonsillectomy was also done and on August 26 she was hospitalized for penicillin therapy. After a ten day course she left the hospital with a slight discharge from a pinhole opening about the old sinus area. The ulcerated area about the sinuses cleared up with application of chlorophyll ointment and is now (Oct. 29, 1945) entirely dry.

Case 7.—A man aged 40, a sales manager, first seen by us on April 2, 1945, presented the complaint of intermittent discharge from a sinus on his right hip. In 1921 he fell and injured his right hip. One year later he had severe pain in the lower part of the left leg with fever. A diagnosis of osteomyelitis of the left tibia was made. He was hospitalized and operated on at that time; one year later the bone was curetted. The wound drained for eight months and then healed and remained so until 1941, when he was again hospitalized for surgery. Since then the wound had not remained closed for longer than six weeks at any one time.

Examination revealed a scar running the entire length of the left tibia with a draining sinus at the distal portion and another scar over the right hip. There was evidence of dental and tonsillar sepsis; the prostate was symmetrical and slightly indurated.

X-ray examination of the lower part of the left leg on April 3, 1945 showed chronic osteomyelitis and osteitis involving the entire shaft of the left tibia. Dental x-rays revealed the presence of four devitalized teeth with root canal fillings and large radiolucent areas at the apexes. There were chronic alveolar abscesses and periapical infection, grade 4. Prostatic smear demonstrated from 5 to 8 white blood cells per high power field, with no clumps. Culture of material from the sinus taken on April 3 gave an abundant growth of hemolytic staphylococci.

The dental sepsis was eliminated and the patient hospitalized on May 22, 1945. Therapy was completed and he was discharged on June 2, 1945 with the sinus completely healed and dry. Another culture taken June 1, 1945 remained sterile at one week.

The patient was last seen on Oct. 22, 1945. He reported that a few days earlier he had noted a slight watery discharge in the region of the old sinus. Examination showed that this was not in any way associated with the old bone condition. Tyrothricin ointment was applied, and this superficial skin ulceration cleared up promptly.

SUMMARY AND CONCLUSIONS

1. Of 7 cases of chronic osteomyelitis involving the extremities, in 3 the hip was affected with either complete ankylosis or limitation of movement. Individual treatment consisted of hospitalization for a period of from ten days to three weeks with intramuscular penicillin (we have used both the sodium and the calcium salt) varying from 10,000 to 20,000 units every three hours. In some cases from 20,000 to 50,000 units were used for the first four doses. Simultaneously from 4,000 to 20,000 units of penicillin per cubic centimeter was applied locally into the sinus tract with 1:1,000 Aerosol O. T. (dioctyl ester of sodium sulfosuccinate) or Tergitol 4 (sodium tetradecyl sulfate) in isotonic solution of sodium chloride. The local application of penicillin to the site of infection was made at regular three hour intervals with quantities of solution up to 4 cc. retained in each sinus cavity either by drainage or with a compression bandage. The drainage method was accomplished by placing the patient in such a position that the sinus, from its cutaneous opening, would be uppermost, thereby allowing the solution of penicillin and wetting agent to seep down by gravity to the area of infected bone. When this was not possible, petrolatum gauze dressings were placed over the sinus after the solution had been injected.

2. We have had one definite failure and in a subsequent publication will present data emphasizing the importance of tracing the location of the sinus opening to the bone with contrast mediums and securing, with minimal surgical intervention, an opening in the sinus directly over this, enabling the optimum amount of solution to reach the infected bone. The simplicity of this principle is demonstrated in case 4, in which the draining sinus was 30 cm. from the infected bone. Prompt results were obtained as soon as the upper portion of this sinus, nearest the primary infection, received adequate penicillin.

3. Considered cosmetically, the nonoperative method of treating chronic osteomyelitis appears preferable to the older technic of saucerization or sequestrectomy, with its attendant mutilation and prolonged hospitalization. In this series alone there had been a total of ninety-one previous operations without any clinical cure.

4. The removal of all sources of focal infection preparatory to treating patients with penicillin-detergent is believed to be of vital importance.

5. Among war casualties, the high morbidity associated with osteomyelitis of the extremities may be substantially reduced if the effectiveness of nonoperative treatment is borne out by wider clinical experience.

Expectation of Life.—It has been estimated that the average expectation of life, at birth, in 1800 was 35 years, and the average woman of childbearing age had eight children born to her. By 1944 these ratios had changed to a life expectancy at birth of approximately 65 years. By 1944 also the average woman who had passed the childbearing age had had 2.2 children instead of 8. The crude death rate during the same period, 1830 to 1940, dropped from 25 (estimated) to the vicinity of 10, and the birth rate from an approximate 55 in 1880 to 20 in 1944—Smillie, Wilson G.: *Preventive Medicine and Public Health*, New York, Macmillan Company, 1946.

SURGICAL TREATMENT OF SPONTANEOUS NONTRAUMATIC HEMATOMAS

MICHAEL SCOTT, M.D.
Philadelphia

The symptomatology of massive intracerebral hemorrhage caused by hypertension is well known. The hopeless outcome in this condition following medical treatment prompted Cushing[1] in 1903 to report surgical therapy in 2 cases. He stated: "In spite of the unfavorable result following operation in both cases, the temporary amelioration of the severe symptoms is a sufficient justification for future attempts to afford surgical relief to certain carefully selected cases of intracerebral hemorrhage."

Since Cushing's article there have been many reports of successful removal of traumatic and spontaneous intracerebral hematomas from the cerebrum and cerebellum.

This paper is limited to spontaneous, nontraumatic hematomas of the left temporal lobe, since these lesions produce a clear, easily recognized clinical syndrome and are amenable, because of their location, to successful evacuation by trephine or craniotomy.

Russell and Sargent,[2] Bagley,[3] Penfield,[4] Craig and Adson,[5] Furlow, Carr and Wattenberg,[6] Pilcher[7] and Rowbotham and Ogilvie[8] have all reported successful results following evacuation of clots in this lobe as well as other cerebral areas. I present the following 3 cases:

Case 1.—L. D., a white man aged 53, referred by Dr. S. W. Eisenberg to the neurologic service of Dr. Sherman F. Gilpin Jr., Temple University Hospital, on Feb. 20, 1944, had an attack of weakness and vomiting two days before admission to the hospital. His wife stated that he "talked funny" and that his speech was difficult to understand. He became irritable and progressively drowsy and was hospitalized.

There was no history of head trauma. The patient had complained of headaches for almost a year and had often vomited in the morning. One month before the present attack he had "influenza" and was told that his blood pressure was "210." The family history was not obtained.

The temperature was 98.4 F., pulse rate 70, respiratory rate 18 and blood pressure 206/96. The patient was drowsy but easily aroused, when he showed a mixed aphasia with jargon speech. Tests for nuchal rigidity were not made. The pupils were equal and reacted sluggishly to light. The eyegrounds showed no choke or hemorrhages. There was a grade 1 sclerosis. A right homonymous hemianopsia was present with macular preservation (Dr. Hosner). The patellar reflex was increased on the right and a Babinski sign was present on this side. A weakness of the lower part of the face was also present on the right. There was no impairment of sensation (corroborated on later examination). The patient was right handed.

The red blood cell count showed 16 Gm. of hemoglobin and 5,630,000 red cells. The white blood cell count was 14,800, with 64 per cent polymorphonuclears, 26 per cent lymphocytes and 3 per cent eosinophils. The urinalysis was not abnormal. The blood Wassermann and Kahn reactions were negative. The sedimentation rate was 18 mm. in one hour. Spinal puncture showed a pressure of 130 mm. of water. The fluid was clear and contained 9 white cells. The protein was 66 mg. per hundred cubic centimeters. The spinal fluid Wassermann reaction was plus, minus, doubtful. The colloidal gold curve was 0023311000.

Another spinal puncture nine days later showed a pressure of 100 mm. of water. The fluid was now xanthochromic and contained only 1 white cell. The protein had increased to 77 mg. per hundred cubic centimeters. The Kolmer Wassermann reaction was negative and the colloidal gold curve 0122210000.

X-ray of the skull showed a shift of the pineal gland 6 mm. to the right and slight erosion of the internal table of the skull in the parietal area (fig. 1). X-ray of the chest was negative (Dr. S. S. Peoples).

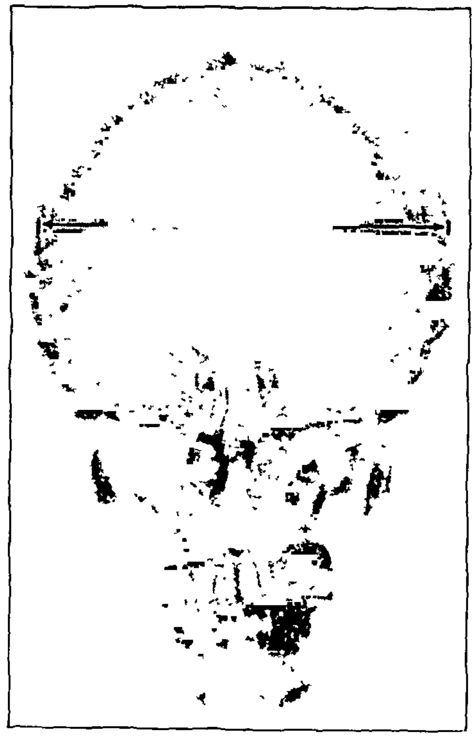

Fig. 1 (case 1).—Note the shift of the pineal gland 6 mm. to the right of the midline, indicating a space-taking lesion in the left cerebrum.

A diagnosis was made of a space-taking lesion in the left temporoparietal lobe, and the patient was transferred to the neurosurgical service. Before operation the patient was conscious and cooperative but still showed the neurologic changes reported on admission. On March 17 a left osteoplastic flap was reflected under solution of tribromoethanol local procaine and pentothal anesthesia. The x-ray report of an erosion of the inner table of the skull proved to be an area of increased vascularity of the inner table not directly over the lesion in the temporal lobe. The gyri over the posterior temporal lobe were pale and widened, the cortex in the posterior superior portion of the lobe was bluish and brownish (figs. 2 and 3). Palpation of this area revealed softening and fluctuation. A cannula was inserted and encountered black, tarry liquid blood at a depth of 1.5 cm. The cortex was incised and a large black hematoma, the consistency of cranberry jelly and the size of an orange, was removed. The remaining cavity appeared to fill the entire posterior half of the temporal lobe and to extend upward and posteriorly, slightly into the parietal and

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Paper published under the auspices of the Section on Nervous and Mental Diseases.
From Department of Neurosurgery, Temple University Hospital and Medical School, Jewish Hospital and the Philadelphia General Hospital.

[1] Cushing, Harvey: Blood Pressure Reaction of Acute Cerebral Compression, Am. J. M. Sc. **125**: 1017, 1903.

[2] Russell, H. E., and Sargent, P.: Apoplectiform Cerebral Hemorrhage; Operation; Evacuation of Blood; Slow Improvement, Proc. Roy. Soc. Med. (Sect. Neurol.) **2**: 44, 1909.

[3] Bagley, Charles, Jr.: Spontaneous Cerebral Hematomas: Discussion of Four Types with Surgical Consideration, Arch. Neurol. & Psychiat. **27**: 1133 (May) 1932.

[4] Penfield, W.: The Operative Treatment of Spontaneous Intracerebral Hemorrhage, Canad. M. A. J. **28**: 369, 1933.

[5] Craig, W. M., and Adson, A. W.: Spontaneous Intracerebral Hemorrhage: Etiology and Surgical Treatment, Arch. Neurol. & Psychiat. **35**: 701 (April) 1936.

[6] Furlow, L. T.; Carr, A. D., and Wattenberg, C.: Spontaneous Cerebral Hemorrhage: The Surgical Treatment of Selected Cases, Surgery **9**: 758, 1941.

[7] Pilcher, Cobb: Subcortical Hematoma, Arch. Neurol. & Psychiat. **46**: 416 (Sept.) 1941.

[8] Rowbotham, G. E., and Ogilvie, A. G.: Chronic Intracerebral Hematomata, Brit. M. J. **1**: 146, 1945.

occipital lobes. What appeared to be a membrane in the floor of the cavity was incised, and it was realized that the ventricle had been entered. There was no free bleeding from this cavity. The dura was closed and the bone flap replaced.

The histologic report was that the specimen presented no evidence of tumor, being composed of blood clots.

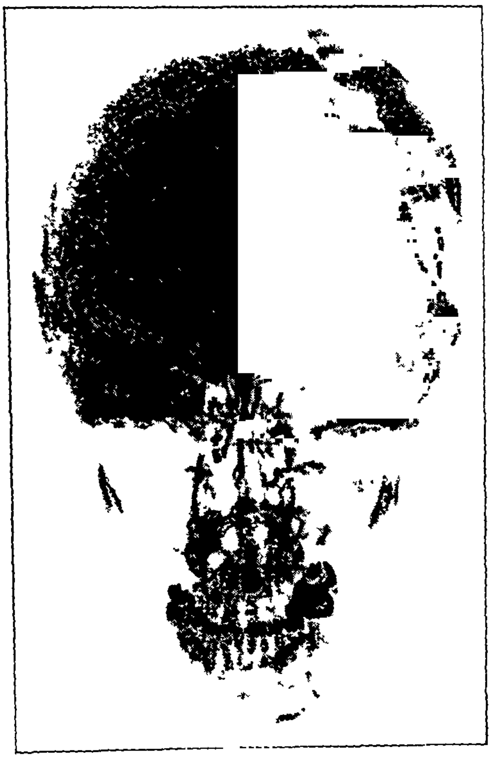

Fig. 2 (case 1)—Postoperative appearance. Silver clips outline softened cortex in the left temporal lobe immediately above the hematoma.

The patient convalesced well and was walking about at the time of discharge on March 29. There was still a mixed aphasia present and a complete right homonymous hemianopsia.

The patient was examined in January 1945, approximately eleven months after onset and ten months after operation. He had no headaches, the aphasia had improved considerably and was evident only when the patient was excited or nervous, and the right homonymous cut was still present. The blood pressure was 190/110.

Case 2.—E. W., a Negro woman aged 40, admitted to the neurologic service of Dr. A. S. Tornay at the Philadelphia General Hospital on Aug. 4, 1944, while working in a laundry was seized with a sudden, severe pain in the left side of her head. Within the next twenty-four hours weakness of the right arm and leg developed and the patient was admitted to the hospital.

There was no history of head trauma. The patient had been complaining of headaches, which were gradually getting worse. The family history was negative for any cerebral accidents.

On admission the temperature was 100 F., pulse rate 64, respiratory rate 18 and blood pressure 140/80. The patient was drowsy but could be aroused and was cooperative. Anomia and jargon speech were present. There was no nuchal rigidity. Examination of the eygrounds showed no choke and no vascular lesions. There was pronounced weakness of the entire right side of the body. The patient was right handed. The complete blood count and urinalysis were not abnormal. The urea nitrogen was 16 mg. per hundred cubic centimeters, the blood sugar 112 mg. per hundred cubic centimeters. The blood Wassermann reaction was negative on two occasions. X-ray of the skull was negative. The pineal gland was not calcified. X-ray of the chest was negative. An electrocardiogram was negative.

Seventeen days after onset, the patient showed a gradual improvement in speech and motor power. Twenty-five days after onset, routine examination of the eyegrounds showed a choked-disk of 2 diopters. The following day a spinal puncture showed xanthochromic fluid under a pressure of 380 mm. of water. Recheck examination twenty-six days after onset showed the presence of sensory mixed aphasia, weakness of the entire right side of the body and no impairment to pain, temperature, touch or vibration sense. Position sense was present in the legs and difficult to test for in the right upper extremity. The deep tendon reflexes were active on both sides. A Hoffman sign was present on the right. Babinski's sign was absent.

Recheck spinal puncture twenty-seven days after onset showed a pressure of 350 mm of water. The spinal fluid showed 8 cells; protein was 50 mg. per hundred cubic centimeters The serologic and colloidal gold tests were not reported

Recheck eye examination thirty days after onset showed no cooperation to visual field test. There was 2 diopters of choked disk in both eyes. A few small hemorrhages were present on the disk. There were none in the periphery of the retina The arteries were small and sclerotic (Dr. J. C Siggins).

The patient's headaches became severe again forty days after onset and surgical intervention was requested.

A preoperative diagnosis was made of hematoma or abscess of the left temporal lobe, and a left exploratory craniotomy was done on September 20, approximately seven weeks after onset of symptoms. The blood pressure before operation was 142/80.

The gyri of the left temporal lobe were wider than usual, and the cortex in the posterior superior portion was yellowish brown. A cannula was inserted in this area and black, tarry liquid blood was aspirated. The cortex was incised and a solid hematoma the size of a small apple removed There was evidence of recent and old bleeding. A biopsy was also taken of material from the floor of the cavity. A small portion of choroid plexus of the lateral ventricle protruded into the depth of the cavity. It was not bleeding, and there was no flow of any ventricular fluid. I could not determine whether the wall of the ventricle had been perforated at operation or the clot had broken into the ventricle. The cortical rim of the cavity was marked with silver clips, and a clip was placed into the deepest portion of the wall (figs. 4 and 5) The biopsy was reported by Dr. Helena E. Riggs as organizing hematoma There were no tumor cells.

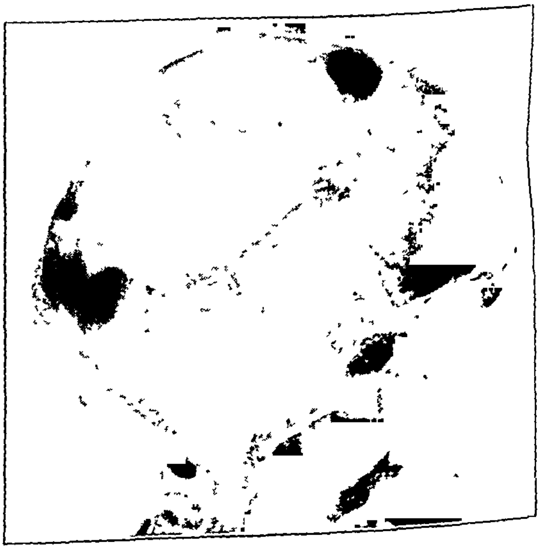

Fig 3 (case 1)—Lateral view

The patient improved rapidly following operation and on the eighth day she was sitting up and jargon speech had disappeared Eighteen days later the patient complained of recurring headaches. Spinal tap showed clear fluid under 100 mg. of water pressure. The blood pressure was 130/75. The patient was placed on restricted fluids and hypertonic enemas, and headaches decreased.

The patient left the hospital twenty-one days after operation. The jargon speech had disappeared, but she still complained of headache at times. No follow-up could be secured.

CASE 3.—H. S., a white man aged 37, was admitted to the medical service of Dr. Mitchell Bernstein at the Jewish Hospital on Sept. 9, 1944. The patient's wife stated that he had been drowsy and, at times, irrational for twelve hours prior to admission.

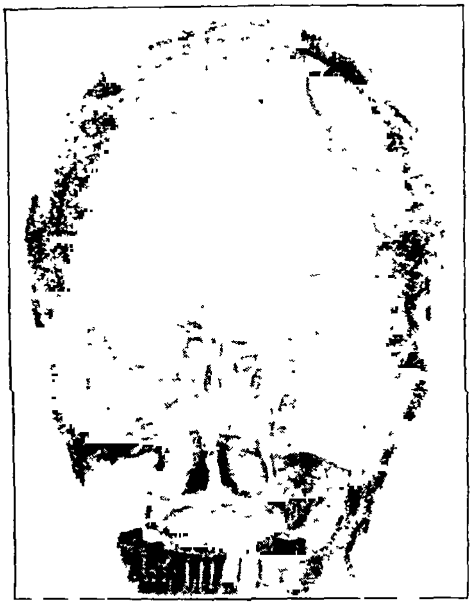

Fig. 4 (case 2).—Postoperative appearance. Maximum point of lesion, presenting on the cortex of the left temporal lobe, outlined by silver clips. Compare this area with figures 2, 6 and 7. Silver clip in floor of cavity shows mesial extension of hematoma.

Fourteen days before admission the patient had complained of constant pain over the left eye and was treated for a frontal sinusitis. No elevation of temperature was present at that time. This pain decreased and the patient was comfortable until the day preceding admission, when during intercourse he suddenly developed a severe pain over the left eye and speech became thick and unintelligible. He rapidly became irrational and drowsy and was admitted to the hospital approximately twelve hours after the onset of the acute head pain. The past history was negative for any serious illness or previous severe headaches. There was no history of head trauma.

The blood pressure on admission was 130/80, the pulse rate 48, the respiratory rate 18 and the axillary temperature 96 F. The patient was very drowsy. He responded to a few commands but did not answer any questions. Slight nuchal rigidity was present. His face was plethoric and there was slight cyanosis of the lips and nails. The right pupil was larger than the left, and there was ptosis of the left upper lid. The Babinski sign was present bilaterally. A provisional diagnosis was made of spontaneous subarachnoid hemorrhage or meningitis. The patient was right handed.

A spinal puncture showed an initial pressure of 300 mm. of water. The fluid was homogeneously pink. There were 1,500 red cells and 10 white cells. The total protein was 100 mg. per hundred cubic centimeters. The spinal fluid Wassermann reaction was negative and culture was sterile. The blood Wassermann test taken on the day of admission was negative. The hemoglobin on two occasions was 15.4 and 14.7 Gm. and the total red blood cells numbered 5,400,000 and 5,210,000. The white blood cell count on admission was 13,000, with 96 per cent polymorphonuclears, 2 per cent lymphocytes and 2 per cent monocytes; the following day it was 14,900, with 72 per cent polymorphonuclears, 25 per cent lymphocytes and 3 per cent monocytes. The blood sugar on two occasions was 110 and 100 mg. The blood urea nitrogen was 11 mg. and 10.5 mg. The carbon dioxide combining power was 44. The sedimentation rate was a diagonal curve, 17 mm. in one hour. Cultures of the nasopharynx showed Bacillus subtilis, Streptococcus viridans and hemolytic Staphylococcus albus. Blood culture was reported negative. The bleeding time was three and one-half minutes, the coagulation time two and one-half minutes and the prothrombin time 30 per cent of the normal control. The vitamin C blood level was 2.0 mg. per hundred cubic centimeters. The purified protein derivative number was subsequently reported as negative.

Nose and throat examination by Dr. Sacks Bricker suggested chronic ethmoiditis but no evidence of acute suppuration in the frontal sinus.

Neurosurgical examination the day after admission revealed a drowsy patient who could be aroused. A mixed aphasia with jargon speech was present. There was nuchal rigidity. There was a ptosis of the left upper lid. The patient winced when the left temporal area was pressed on or percussed. The eyegrounds showed no choke, hemorrhage or exudate. There was no cooperation to the field test. There was weakness of the right lower third of the face and pronounced weakness of the right arm and leg. A Babinski sign was present on the right. The patient winced when pinched in either leg, but there was no cooperation to sensory tests. These symptoms suggested a rapidly expanding lesion into the left temporal lobe, probably a hematoma. An aneurysm of the left circle of Willis, as well as brain abscess, was considered. A stereoscopic x-ray for pineal shift was requested. The patient was placed on 24 ounces (720 cc.) of total fluids in twenty-four hours. He was given 50 cc. of 50 per cent sucrose intravenously every two hours for three doses and a hypertonic magnesium sulfate enema every eight hours; vitamin C 100 mg. (subcutaneously) and vitamin K 8 mg. (subcutaneously) were given daily.

The patient was seen by the attending neurologist, who felt that he had a lesion in the left temporal lobe and that a cerebritis with a brain abscess must be ruled out.

The cardiac and general medical examinations were entirely negative. The electrocardiogram was negative. X-rays of the sinuses and chest were negative. The heart was slightly enlarged

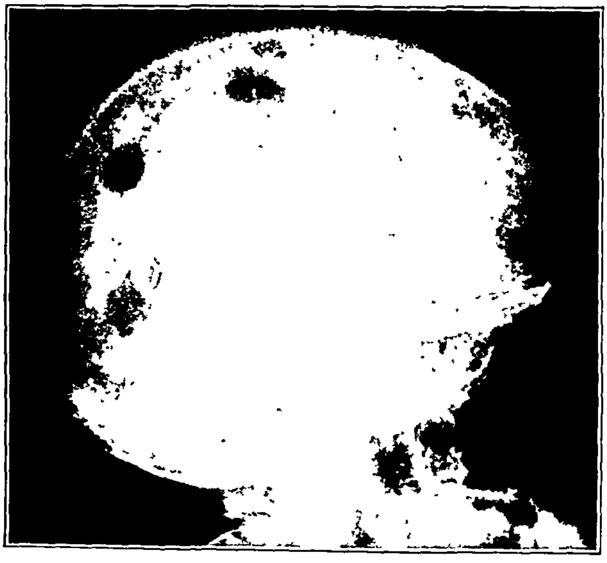

Fig. 5 (case 2).—Lateral view.

X-rays of the skull on the third day after admission showed a shift of the pineal gland to the right of the midline (Dr. Leon Solis-Cohen).

Following the dehydration measures, the patient improved considerably by the sixth day after admission. Spinal puncture at this time showed a clear fluid under 110 mm. of water pressure. There were no red cells and only 4 white cells. During the next six days the headaches again became severe, the patient became drowsy, operation was decided on and the patient was transferred to the neurosurgical service.

A left exploratory craniotomy was done on September 22, approximately thirty days after the initial onset of left supraorbital headache and sixteen days after admission to the hospital. The gyri of the superior portion of the left temporal lobe were flattened. A cannula was inserted and liquid black, tarry blood aspirated. The cortex was incised and a large semisolid clot, about 6 cm. in diameter, was aspirated by suction. When the clot was removed, the thin transparent mesial wall of the ventricle was seen and a small portion of the choroid plexus herniated through into the clot cavity. No bleeding occurred from the choroid plexus. There was no gross evidence of tumor. The cortical rim of the cavity was outlined with silver clips, the dura closed and the flap replaced (figs. 6 and 7).

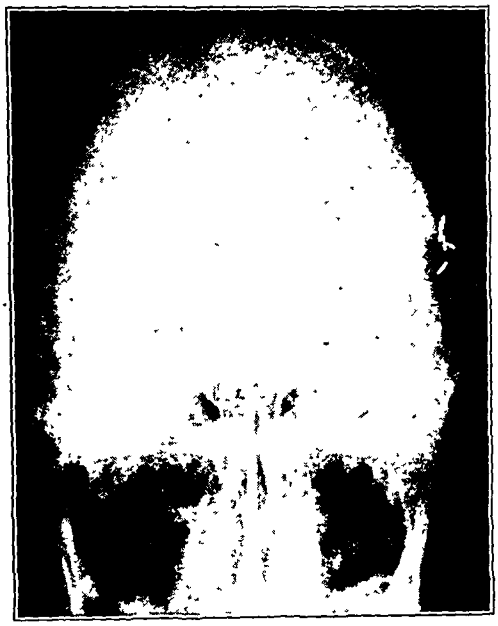

Fig. 6 (case 3).—Postoperative appearance, showing silver clips which outline maximum point of lesion in the cortex of the left temporal lobe. Note that this area is almost identical in all 3 cases.

Following the operation the patient's blood pressure ran between 170 and 120 systolic and 80 to 90 diastolic. The last five days before discharge it stayed at the 120/80 level.

The patient was fully well with no headache and slight jargon speech on discharge on October 18.

Recheck examination Jan. 2, 1945, approximately three and one-half months after operation, revealed that the patient had had no headache, speech was excellent, and there were occasional anomia and jargon speech when excited. A homonymous right inferior quadrant cut was present to the finger test. Muscle power was excellent. There was no impairment to pain, touch, warm or cool sensation, vibration, position sense or stereognosis. Blood pressure was 130/90.

COMMENT

The etiology of these hematomas is still obscure. Miliary aneurysm was suggested by Charcot and Bouchard in 1868; Von Monakow in 1905 believed that atheroma and hyaline degeneration should be considered. Ellis in 1909 stated that the lesion responsible was arteriosclerosis, beginning in the elastic layer, possibly involving all coats and resulting in aneurysm or simple rupture.[3] Pick in 1910, however, concluded "The importance of miliary aneurysms in the causation of hemorrhage has been exaggerated." Sachs,[9] however, believed that Pick's findings at least suggested some aneurysmal dilatation of the vessel wall as the cause for the hemorrhages.

Westphal believed that the actual hemorrhage was preceded by a period of ischemia, the result of angiospasm. During the period of spasm, the tissues surrounding the vessels were altered and after return of the blood into the vessels this tissue did not offer sufficient resistance to vessel wall and leakage occurred.[3] Against this theory might be cited the hundreds of attacks of homonymous hemianopsia that occur in certain migraine patients for years without a permanent field cut resulting.

Globus and Strauss believe that cerebral apoplexy is a final event and that it is preceded by softening.[4]

Marburg [10] made microscopic studies of cerebral hemorrhage in younger persons and concluded that these hemorrhages are due to toxic or toxic infectious changes in the walls of the blood vessels; that these changes remain latent for a considerable period of time but may lead to sudden increase in blood pressure and consequent hemorrhage through overexcitement or overwork or some other emotional factor.

A search for a clue as to etiology in 15 cases of intracerebral hematoma of the left temporal lobe (12 reported elsewhere and 3 cases reported herein) showed the following:

The blood Wassermann reactions were recorded in 7 cases and all were negative. Hypertension was present in approximately 40 per cent of the entire group. Pyogenic infection was not proved in any of the cases, although the white count and sedimentation rate were elevated at times. Trauma was carefully ruled out. Metabolic disturbances were not reported. Exogenous poisons were not reported, and little mention is made of the patient's occupation. Penfield reported a case in which the onset of symptoms came on after a 14 year old boy smoked his first pipe. He attributed the accident to the strain of vomiting rather than to the toxicity of the nicotine.

Congenital anomalies or aneurysms were not reported. These lesions could easily be missed during a brain operation, and only two autopsies were done in the entire group.

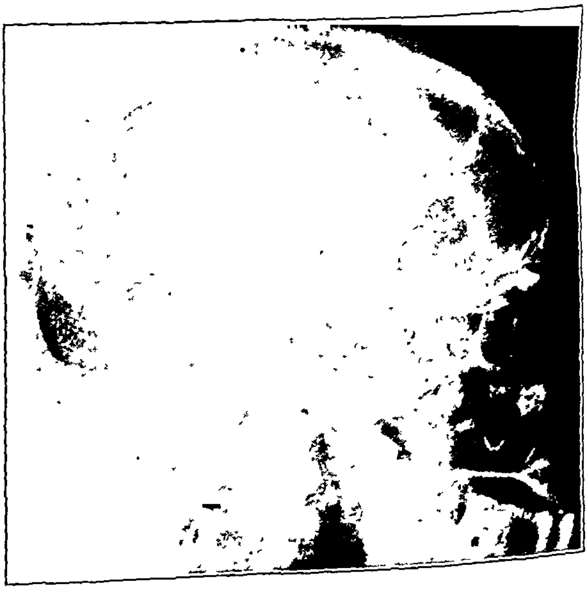

Fig. 7 (case 3).—Lateral view.

Brain tumor was not found as the primary cause in any of the cases. This is probably because such cases

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9. Sachs, B.: Apoplexy, Bull. New York Acad. Med. 4: 1250, 1928.

10. Marburg, O.: Difficulties of Differential Diagnosis of Hemorrhage in Young Persons with Appearance of Brain Tumors and Encephalitis, Deutsche Ztschr. f. Nervenh. 105: 22, 1928.

would be reported as brain tumors complicated by or associated with hemorrhage rather than as spontaneous hematomas.

Blood dyscrasias were searched for in 1 case of my series and the only abnormality found was a prothrombin level of 30 to 37 per cent of normal and a slight increase in red cells and hemoglobin. This abnormality was not mentioned in the 12 cases reported by others.

Excitement or exertion appeared to be a precipitating factor in case 2, since severe sudden headache came on while the patient was working in a laundry and in case 3, when the sudden pain came on during sexual intercourse. Penfield, as stated previously, attributes the acute onset in a boy of 14 to severe vomiting following the smoking of his first pipe. Bagley reported a sudden onset in an overheated quarryman on a hot July day. Craig and Adson stressed strenuous exercise and severe emotional strain as possible precipitating factors in the nontraumatic cases.

Spontaneous intracerebral hematomas were most frequent between the ages of 30 and 50 (66⅔ per cent).

There were 8 males and 7 females, 13 white and 2 Negro. The symptoms and signs follow, in general, the pattern reported by Furlow and his associates.[6] The onset was sudden in 13 of the 15 cases. The presenting symptom in 10 was severe headache, usually frontal or occipital, at times on the side of the lesion and often associated with nausea and vomiting. The condition occasionally started with sudden unconsciousness or a convulsion. Some degree of aphasia, usually with anomia or jargon speech, was present in every case in which coma was not present. Nuchal rigidity was reported in 3 cases.

Irregularity of the pupils was reported in 3 cases, ptosis of the upper lid on the side of the lesion in 1. Ophthalmologic examination revealed hypertension or arteriosclerosis in 2 cases. Choked disk frequently occurred a few weeks after the onset. It was reported in 7 cases of the 15, slight in 5 cases (examined from the first day to the eighteenth day after the onset of the illness) and pronounced in 2 cases, 1 three weeks after the onset of illness and another six to eight weeks after onset.

A right homonymous hemianopsia was present in cases 1 and 3 of this series. Visual field examinations were reported in only 2 cases reported by others, and in 1 a right homonymous cut was found. The deep tendon reflexes were usually increased on the right and the Babinski sign was present on this side in 8 cases, and the Hoffman alone on the right in 2 cases.

Right sided paralysis to a varying degree came on within a few hours to a few days in 14 of the 15 cases (93 per cent). The face alone was involved in only 1 case. The arm and face were most involved in 2 cases.

Impairment of sensation was reported in only 2 cases of the entire series, and in these the parietal lobe was involved more than the temporal lobe.

The final fluid pressure was reported in 6 cases and found elevated in 4. The color of the fluid was recorded in 8 cases; it was clear in 1, blood tinged in 3 and xanthochromic in 4. The spinal fluid protein was increased in the 4 cases in which it was reported, regardless of the time of puncture from onset of illness. The protein varied from 50 to 100 mg., with an average of 72 mg. per hundred cubic centimeters of spinal fluid.

X-rays of the skull were done in all 3 cases of this series and the pineal gland was shifted to the right of the midline in 2 (cases 1 and 3). X-rays of the skull were reported in only 2 cases of the 12 taken from the literature. The pineal position was not mentioned. An encephalogram was unsuccessful in 1 case and a ventriculogram was diagnostic for a left sided lesion in another.

The time from onset of symptoms to operation varied considerably. The earliest period was three days and the latest nine months: 2 cases, first week; 7 cases, second to fourth week; 2 cases, fourth to fifth week; 3 cases, sixth to seventh week; 1 case, thirty-sixth week. From this it appears that early operation is not essential.

A left exploratory craniotomy was done in 13 cases and a trephine with aspiration in 2. The usual procedure was to tap the soft cortex, aspirate the liquid tarry blood, incise the cortex, remove the hematoma by suction and, as a precaution, take a biopsy of the hematoma and cavity wall as suggested by Furlow to rule out tumor. The site of the lesion in every case was *the posterior superior portion of the left temporal lobe* with some extension, at times, into the parietal and occipital lobes.[11] The gyri were often flattened and widened and soft to palpation. In 7 of 15 cases the cortex was stained a brownish yellow, a bile-tinged color (first reported by Penfield). The hematomas were all subcortical, often a few centimeters below the cortex and usually the size of a small orange. In over 50 per cent of the cases the cavity contained both tarry liquid blood and a larger amount of solid blood clot. A cyst wall was reported in only 1 case. The cavity in this case contained yellowish brown fluid and represented the end results of a hematoma, the operation being performed nine months after the sudden onset of a hemiplegia (Pilcher case 5).

Age of Onset

Age Group	Number of Cases
10-19 years	1
20-29 years	1
30-39 years	6
40-49 years	4
50-54 years	3

No evidence of tumor tissue was reported in any case. In the 3 cases in this series the thinned mesial walls of the lateral ventricle could be seen after the clot was removed. In 2 cases a tuft of the choroid plexus was found projecting through the wall into the cavity of the hematoma. This was probably an artefact produced by the suction. Penfield reported one clot as extending from the pia of the cortex to the wall of the ventricle, which was not entered but displaced.

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[11] Naffziger also called attention to this area as being the most common site, in his experience, for both the spontaneous and the traumatic hematomas (discussion of Craig and Adson[8]). No definite reason could be found for the selective location of the hemorrhage. It appeared to me that this area is a terminal zone for the subcortical branches of the middle cerebral artery. The area probably receives little supply, if any, from the posterior cerebral artery. It may be that at this point the blood supply is at a minimum of efficiency. Should a disease process occur, the possibility of softening with resultant rupture of a small arteriole, and the production of a hematoma, must be considered. There is also a diversity of opinion as to whether the hemorrhage is of arterial or venous origin. Craig and Adson[8] favored the venous origin, since they noted that, after the clots were evacuated and the cavity explored, no active bleeding could be found. On the other hand, Rowbotham and Ogilvie[10] have reported that after the removal of the intracerebral hematoma in 2 cases they found, in the wall of the cavity, a small adherent clot plugging the mouth of the arteriole that was ruptured. They give no histologic evidence as to whether the plugged vessel was an artery or a vein. W. B. Hamby (Gross Intracerebral Hematomas, New York State J. Med. 45:866, 1945) recently reported 16 cases of intracerebral hematomas occurring in various lobes. One case was proved to be due to a ruptured aneurysm.

POSTOPERATIVE RESULTS

There were no fatalities in the 3 cases reported in this paper. The shortest follow-up in this series was of patient 2, twenty-one days, and she still complained of headaches at the time she left the hospital. Patient 1 was reexamined twelve months postoperatively. He works about his home. Jargon speech occurs at times when he is excited. A right homonymous cut is still present. Blood pressure was 190/110. Patient 3 was seen three and one-half months after operation, felt fine and had occasional jargon speech when excited. The homonymous cut had receded to an inferior homonymous quadrant cut. He had no motor or sensory disturbances. The blood pressure was 130/90. One month after this examination he had a generalized convulsion. Recheck examination six months after operation showed only a residual inferior right homonymous quadrantopsia. The patient felt well, he had no headaches or convulsions, his speech was excellent and he worked as a stock room clerk.

There were three fatalities in the 12 cases reported by various authors. Two of these patients were in coma when operated on and they had a blood pressure of 220/110 and 210/55. These were the highest blood pressures recorded in the entire series. One was operated on the fifth day after onset and the other the twenty-third day. In both cases autopsy showed a large clot still present in the temporal lobe with surrounding edema of the brain.

Of the 9 patients that survived operation, 5 showed various degrees of residual speech disturbances, 4 had some degree of paralysis and 1 had only a field cut. A residual visual field cut alone was present in 1 case (eight year follow-up) and some degree of hemiparesis alone was reported in 3 cases.

SUMMARY

Three cases of spontaneous hemorrhage into the left temporal lobe of right handed patients showed a group of symptoms falling into the following pattern:

1. Sudden onset with severe headache in 2 cases and an aphasia in the third.
2. Progressive drowsiness.
3. Focal symptoms of an expanding lesion in the left temporal lobe: (*a*) partial aphasia with anomia and jargon speech, (*b*) right homonymous hemianopsia, (*c*) increased deep tendon reflexes on the right, (*d*) Hoffman and Babinski signs on the right, (*e*) progressive weakness of the right side of the body, (*f*) no sensory disturbances, (*g*) shift of the pineal gland to the right.
4. The spinal fluid pressure was usually increased and the fluid was blood tinged, clear or xanthochromic. The total protein was increased above normal.

Following a left exploratory craniotomy, a subcortical hematoma was found in all 3 cases, in the left posterior superior temporal lobe. The clot was removed by suction, the dura closed and the bone flap replaced.

Recovery with improvement took place in all 3 cases.

A series of 12 similar cases reported by various authors fell into the same symptom pattern as the cases reported here.

No definite etiology could be found. Excitement and overexertion appeared to be precipitating factors.

Inadequate studies were made in most cases concerning exogenous toxins, blood dyscrasias, virus and other forms of infection.

CONCLUSIONS

1. Spontaneous, nontraumatic hemorrhage into the left temporal lobe produces a syndrome of an acute focal expanding intracranial lesion.
2. These cases are often erroneously diagnosed as "stroke" caused by cerebral arteriosclerosis or hypertension.
3. Any person, regardless of age, developing sudden headache associated with progressive focal signs such as aphasia, hemiplegia, anesthesias or visual field defects, vomiting and progressive drowsiness should be considered to have a space-taking lesion, possibly intracerebral hematoma. They should have the advantage of the following basic studies: (*a*) neurologic examination, (*b*) stereoscopic x-rays of the skull for pineal shift, (*c*) examination of the eyegrounds and perimetric fields and (*d*) careful spinal puncture for pressure, differential cell count, quantitative protein and Wassermann reaction.
4. Exploratory craniotomy with evacuation of the blood clot offers the best method of treatment in cases showing progression in signs and intracranial pressure.

255 South Seventeenth Street, Philadelphia 3.

DESENSITIZATION TO INSECT BITES

ALEXANDER HATOFF, M.D.
Oakland, Calif.

The return of servicemen from the far flung battlefronts of this global war has served to emphasize the problem of insect borne diseases. To date, most of the efforts of the sanitarian have been concentrated against the animal reservoirs of these diseases, and against the insect vectors of these diseases. Little has been reported on the immunity or resistance of the individual human host against the bites of insects.

Many laymen make the chance observation that at the beginning of the mosquito season they are bothered by mosquito bites. They then note that this becomes less troublesome as the season wears on. The same is true for flea bites.

The region surrounding the San Francisco Bay abounds in fleas. It is not surprising, therefore, to find references to experimental studies on the subject of immunity to flea bites emanating from this area. In 1939 Cherney, Wheeler and Reed[1] concluded that "if it is possible to induce 'immunity' against flea bites, it is probably likewise possible to 'immunize' against bites of other insects. If so, this would be an extremely valuable adjunct in the control of insect borne diseases." To prove their thesis that the selection of victims by fleas is not a matter of chance and that there is evidence of immunity to flea bites, these investigators actively immunized with flea antigen a group of 26 persons very susceptible to flea bites. The resultant immunity was demonstrated objectively in their series.

In 1941 McIvor and Cherney[2] described the technic of desensitization to flea bites. They used a polyvalent flea antigen prepared from whole fleas of the species Pulex irritans and Ctenocephalides canis. All patients

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Miss Martha Eaton made the statistical analysis of data.

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From the Department of Pediatrics, Permanente Foundation Hospitals, Oakland and Richmond, Calif.

[1] Cherney, L. S.; Wheeler, C. M., and Reed, A. C.: Flea Antigen in Prevention of Flea Bites, Am. J. Trop. Med. **19**: 327-332 (July) 1939.

[2] McIvor, B. C., and Cherney, L. S.: Studies in Insect Bite Desensitization, Am. J. Trop. Med. **21**: 493-497 (May) 1941.

TABLE 1.—*Benefit from Flea Antigen*

Case No.	Name	Age	Sex	Race	Duration of Symptoms	Presence of Wheal	Irritation	Pruritus	Secondary Infection	No. of Injections	Results	Time	Comment
1	G. T.	3 yrs.	♀	W	..	—	+	+	—	4	Clear	2d	No bites after second injection
2	D. T.	2 mo.	♂	W	..	—	+	+	—	4	Clear	8d	
3	K. H.	5 yrs.	♂	W	..	—	+	+	—	5	Clear	10d	
4	D. H.	2 yrs.	♂	W	..	—	+	+	—	4	Clear	8d	
5	L. D.	2 yrs.	♀	W	..	—	+	+	—	4	Improved	8d	
6	K. C.	9 yrs.	♀	W	..	—	+	+	—	5	Clear	8d	Entirely clear after 4th injection
7	S. M.	3 yrs.	♂	W	..	—	+	+	—	4	Clear	8d	
8	C. B. S.	1½ yrs.	♀	W	..	—	+	+	—	4	Improved	8d	Benefited for 4 mos., then relapsed
8	C. B. S.	2 yrs.	♀	W	2 mos.	—	+	+	—	3	Improved	6d	
9	P. S.	8 mos.	♂	W	..	—	+	+	—	2	Clear	4d	
10	J. S.	2 yrs.	♂	W	..	—	+	+	—	2	Clear	4d	
11	S. S.	6½ yrs.	♀	W	..	—	+	+	—	2	Clear	4d	
12	R L. T.	11½ yrs.	♂	W	..	—	+	+	—	5	Clear	10d	
13	C. W.	9 mos.	♀	W	..	—	+	+	—	3	Clear	6d	
14	J. H.	2½ yrs.	♀	W	..	—	+	+	—	4	Clear	8d	
15	F. W.	2½ yrs.	♂	W	..	—	+	+	—	1	Clear	2d	
16	M. S.	2½ yrs.	♂	W	..	Papules only	+	+	Impetigo	4	Clear	8d	
17	W. J.	5½ yrs.	♀	W	..	Papules only	+	+	—	4	Clearing	8d	Fleas still bite, but little reaction
17	W. J.	5½ yrs.	♀	W	2 mos.	Papules only	+	+	—	6	Clear	12d	Remained clear after this relapse
18	J. O.	7 yrs.	♀	W	..	—	+	+	—	5	Clear	10d	
19	P. O.	3 yrs.	♀	W	..	+	+	+	—	3	Clear	6d	
20	N. S. S.	2 yrs.	♀	W	..	+	+	+	—	4	Clear	8d	
21	R. McM.	3 yrs.	♂	W	..	+	+	+	—	3	Clear	6d	
22	L. C.	2 yrs.	♂	W	..	+	+	+	+	3	Clear	6d	Relapse after 4 months
22	L. C.	2½ yrs.	♂	W	2 mos.	+	+	+	—	4	Clear	8d	No recurrences
23	R. C.	2½ yrs.	♂	W	..	+	+	+	—	4	Clear	8d	
24	M. D.	13 mos.	♀	W	4 mos.	+	+	+	+	1	Improved	2d	Decrease in pruritus
25	D. J. R.	11 yrs.	♀	C	10½ yrs.	+	+	+	Impetigo	2	Cleared	4d	
26	R. R.	5 yrs.	♂	W	..	+	+	+	+	4	Clear	8d	Relapsed after 10 mos.
26	R. R.	6 yrs.	♂	W	2 mos.	+	+	+	—	6	Clear	12d	No recurrences
27	J. A. F.	7 yrs.	♀	W	3 wks.	+	+	+	—	6	Clear	12d	
28	J. B.	3 yrs.	♀	W	..	+	+	+	—	2	Clear	1wk	
29	L. P.	2 yrs.	♂	W	6 mos.	+	+	+	+	4	Clear	8d	Relapsed
29	L. P.	2 yrs.	♂	W	2 mos.	+	+	+	—	1	Clear	2d	No further relapses
30	M. L. H.	4 yrs.	♀	C	4 yrs.	+	+	+	—	4	Clear	8d	
31	G. F.	6 yrs.	♀	W	6 yrs.	+	+	+	—	1	Clear	2d	
32	G. F.	4 yrs.	♀	W	4 yrs.	+	+	+	—	1	Clear	2d	
33	W. R.	8 yrs.	♂	W	1 yr.	+	+	+	+	5	Clear	10d	
34	N. G.	7 yrs.	♀	W	..	+	+	+	—	3	Clear	6d	
35	J. M.	2 yrs.	♂	W	3 wks.	+	+	+	+	2	Clear	4d	
36	M. C.	5 yrs.	♀	W	..	+	+	+	—	3	Clear	6d	
37	B. J. A.	3 yrs.	♀	W	..	+	+	+	—	4	Clear	8d	
38	T. R.	1 yr.	♂	W	..	+	+	+	+	4	Clear	8d	
39	J. O.	3 yrs.	♂	W	..	+	+	+	—	4	Clear	8d	
40	M. B.	6 yrs.	♂	W	..	+	+	+	—	1	Clear	2d	
41	S. B.	2 yrs.	♀	W	..	+	+	+	—	4	Clear	8d	
42	G. R.	2 yrs.	♂	W	1 wk.	+ with bullous reaction	+	+	+	4	Clear	8d	Remained clear for 2 mos., then relapsed
43	J. A. C.	3 yrs.	♀	W	..	+	+	+	—	4	Clear	8d	
44	LaV. G.	6 yrs.	♂	W	1 wk.	+	+	+	—	4	Clear	8d	
45	M. F.	2 yrs.	♀	W	..	+	+	+	—	4	Clear	8d	
46	Z. E. E.	4½ yrs.	♀	W	..	+	+	+	—	6	Clear	2d	Patient cleared after 1st injection
47	F. R.	3 yrs.	♂	W	Months	+	+	+	—	3	Clear	6d	Relapsed after 2 mos.
48	R. P.	11 yrs.	♂	W	Several months	+	+	+	—	6	Clear	12d	
49	H. K. S.	4 yrs.	♂	W	4 yrs.	+	+	+	+	4	Clear	8d	
50	J. H.	3 yrs.	♀	W	..	+	+	+	+	4	Clear	8d	
51	I. E. A.	7 yrs.	♀	W	2 mos.	+	+	+	—	4	Clear	8d	
52	L. S.	4 yrs.	♀	W	..	+	+	+	—	4	Clear	8d	
53	M. J. H.	2 yrs.	♂	W	Months	+	+	+	—	4	Clear	8d	
54	B. P.	2 yrs.	♂	W	2 yrs.	+	+	+	+	4	Clear	8d	
55	H. S.	3 yrs.	♂	W	1 mo.	+	+	+	—	4	Clear	8d	
56	F. F.	1 yr.	♂	W	Months	+	+	+	—	3	Clear	6d	
57	J. R.	1½ yrs.	♀	W	1 wk.	+	+	+	—	4	Clear	8d	
58	J. P.	2 yrs.	♀	W	..	+	+	+	—	1	Clear	2d	
59	C. B.	7 yrs.	♀	W	..	+	+	+	—	3	Clear	6d	
60	D. B. H.	3 yrs.	♂	W	..	+	+	+	—	4	Clear	8d	
61	B. P.	10 yrs.	♂	W	..	+	+	+	—	1	Clear	2d	
62	D. P.	5 yrs.	♀	W	..	+	+	+	—	1	Clear	2d	
63	J. R.	12 yrs.	♂	W	..	+	+	+	—	6	Clear	12d	
64	D. S.	5 yrs.	♂	W	Weeks	+	+	+	+	4	Clear	3wks	
65	P. M.	4 yrs.	♂	W	1 mo.	+	+	+	—	4	Clear	8d	
66	N. G. L.	2 yrs.	♀	W	..	+	+	+	—	1	Clear	2d	
67	L. S.	3 yrs.	♂	W	1 wk.	+	+	+	—	1	Clear	2d	
68	S F.	4 yrs.	♂	W	..	+	+	+	—	4	Clear	8d	
69	B. T.	2 yrs.	♀	W	..	+	+	+	—	4	Clear	8d	
70	L. B.	10½ yrs.	♀	W	9 mos.	+	+	+	—	6	Clear	12d	
71	G. H.	2 yrs.	♂	W	1 wk.	+	+	+	—	3	Clear	6d	Remained clear for 1 yr., then relapsed
71	G. H.	3 yrs.	♂	W	..	+	+	+	—	4	Clear	8d	
72	S. W.	3 yrs.	♂	W	5 mos.	+	+	+	—	4	Clear	8d	
73	J. J.	3 yrs.	♂	W	1 wk.	+	+	+	—	4	Clear	8d	
74	G. M.	3 yrs.	♂	W	..	+	+	+	—	4	Clear	8d	
75	R. C.	2 yrs.	♂	W	1 mo.	+	+	+	—	2	Clear	7d	
76	J. B. C.	3 yrs.	♀	W	2 yrs.	+	+	+	—	4	Clear	8d	
77	V. A. C.	1 yr.	♀	W	1 wk.	+	+	+	—	3	Clear	6d	
78	S. H.	2 yrs.	♀	W	1 yr.	+	+	+	—	2	Clear	4d	
79	J. A.	6 yrs.	♀	W	4 mos.	+	+	+	—	6	Clear	2wks	
80	K. A.	3 yrs.	♀	W	..	+	+	+	—	4	Clear	8d	
81	M. W.	5 yrs.	♂	W	..	+	+	+	—	6	Clear	14d	
82	C. W.	2 yrs.	♀	W	..	+	+	+	—	4	Clear	8d	
83	J. M. B.	2 yrs.	♂	W	..	+	+	+	—	4	Clear	8d	
84	R. J. B.	4 yrs.	♂	W	..	+	+	+	—	4	Clear	8d	
85	T. V. J.	2 yrs.	♂	W	..	+	+	+	—	4	Clear	8d	
86	B. L.	3 yrs.	♀	W	3 wks.	+	+	+	—	2	Clear	4d	Remained clear for 1 yr., then relapsed

TABLE 1.—*Benefit from Flea Antigen—Continued*

Case No.	Name	Age	Sex	Race	Duration of Symptoms	Presence of Wheal	Irritation	Pruritus	Secondary Infection	No. of Injections	Results	Time	Comment
86	B. L.	4 yrs.	♀	W	..	+	+	+	—	1	Clear	2d	
87	R. J.	1 yr.	♂	W	1 wk.	+	+	+	—	4	Clear	8d	
88	J. McC.	8 yrs.	♀	W	..	+	+	+	—	3	Clear	6d	
89	E. D.	2 yrs.	♂	W	3 wks.	+	+	+	—	3	Clear	6d	
90	D. S.	2 yrs.	♀	W	..	+	+	+	—	3	Clear	6d	
91	M. A. S.	5 yrs.	♀	W	..	+	+	+	—	5	Clear	24d	Patient cleared 2 wks. after last injection
92	M. S.	2 yrs.	♂	W	..	+	+	+	—	4	Clear	8d	
93	W. E. G.	1 yr.	♂	W	1 wk.	+	+	+	—	3	Clear	6d	Later had new bites without reaction
94	C. H.	1 yr.	♀	W	..	+	+	+	—	2	Clear	4d	
95	E. M.	5 yrs.	♂	W	..	+	+	+	+	3	Clear	6d	
96	B. M.	2 yrs.	♀	W	..	+	+	+	—	4	Clear	8d	
97	M. P.	9 yrs.	♂	W	Weeks	+ with urticarial reaction	+	+	—	6	Clear	14d	
98	S. M.	7 yrs.	♀	W	..	+	+	+	—	6	Clear	14d	
99	W. W.	7 yrs.	♂	W	Years	+ with urticarial reaction	+	+	—	6	Clear	14d	
100	T. D.	6 yrs.	♂	W	2 mos.	+	+	+	—	6	Clear	12d	

TABLE 2.—*Equivocal Benefit from Flea Antigen*

Case No.	Name	Age	Sex	Race	Duration of Symptoms	Presence of Wheal	Irritation	Pruritus	Secondary Infection	No. of Infections	Results	Time	Comment
1	I. G.	3 yrs.	♀	W	Months	+	+	+	—	4	Papules remain; decreased pruritus	8d	Relapse in 4 mos.
2	J. G.	5 yrs.	♀	W	Months	+	+	+	+ Impetigo	6	Papules remain; decreased pruritus	12d	Relapse in 4 mos
3	L. S.	3 yrs.	♂	W	Months	+	+	+	—	4	Papules remain; pruritus intense	8d	
4	D. M.	2 yrs.	♀	W	1 mo.	+ Urticaria	+	+	—	4	Fleas still bite	8d	Disappearance of urticaria
5	B. L. K.	2 yrs.	♀	W	..	+	+	+	—	4	Papules smaller; decreased pruritus	8d	
6	P. M.	2 yrs.	♂	W	..	+	+	+	—	4	Decreased intensity of reaction	8d	Fleas still bite

TABLE 3.—*Failure to Respond to Flea Antigen*

Case No.	Name	Age	Sex	Race	Duration of Symptoms	Presence of Wheal	Irritation	Pruritus	Secondary Infection	No. of Injections	Results	Time
1	J. W. M.	8 mos.	♂	W	..	+	+	+	—	4	No change	3 mos.
2	A. M. C.	3 yrs.	♀	W	..	+	+	+	—	3	No change	6d
3	J. A.	2 yrs.	♂	W	..	+	+	+	—	2	No response	4d
4	I. H.	1½ yrs.	♀	W	..	+	+	+	—	4	No change	8d
5	C. E.	2½ yrs.	♀	W	..	+	+	+	—	4	No improvement	8d
6	J. A.	3 yrs.	♂	W	4 days	+	+	+	+	4	No change	8d
7	E. S.	3 yrs.	♀	W	Months	+	+	+	—	4	No change	8d
8	D. B.	3 yrs.	♂	W	Months	+	+	+	—	4	No change	8d
9	S. C.	6 yrs.	♀	W	Months	+	+	+	—	5	No change	10d
10	C. F.	2 yrs.	♂	W	5 mos.	+	+	+	—	4	No change	8d
11	A. S.	1 yr.	♂	W	1 wk.	+	+	+	—	3	No change	6d
12	L. McC.	2 yrs.	♂	W	..	+	+	+	—	4	No change	2 mos.
13	T. C.	3 yrs.	♂	W	Weeks	+	+	+	—	4	No response	6d
14	S. G.	3 yrs.	♀	W	..	+	+	+	—	4	No response	8d
15	O. B.	6 yrs.	♂	W	1 wk.	+	+	+	—	6	No response	12d
16	S. H.	6 yrs.	♀	W	Weeks	+	+	+	—	6	No response	12d
17	P. G.	3 yrs.	♀	W	3 wks.	+	+	+	+	4	No response	8d
18	C. G.	2 yrs.	♂	W	3 wks.	+	+	+	—	4	No response	8d
19	D. S.	6 yrs.	♀	W	Weeks	+	+	+	—	4	No response	8d
20	P. B.	6 yrs.	♀	W	..	+	+	+	—	4	No response	8d
21	C. S.	4 mos.	♀	W	1 wk.	+	+	+	+	4	No response	8d
22	L. H.	2 yrs.	♀	W	2 wks.	+	+	+	+	4	No response	9d
23	E. J.	2 yrs.	♂	W	1 mo.	+	+	+	—	4	No response	8d

TABLE 4.—*Case Distribution by Age Group, Sex and Result*

	Number Benefited			Number Equivocal			Number Not Benefited			Total Number		
Age Group	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0- 4 months	1	..	1	..	..	..	..	1	1	1	1	2
5- 8 months	..	..	..	..	..	..	1	..	1	1	..	1
	..	1	1	..	..	..	..	..	..	..	1	1
	4	5	9	..	..	..	1	1	2	5	6	11
	..	1	1	..	..	..	..	..	..	..	1	1
2- 3 years	27	20	47	2	3	5	8	6	14	37	29	66
4- 5 years	8	8	16	..	1	1	..	..	..	8	9	17
6- 7 years	4	10	14	..	..	..	1	4	5	5	14	19
8- 9 years	3	2	5	..	..	..	..	..	..	3	2	5
10 years and over	4	2	6	..	..	..	..	..	..	4	2	6
Total	51	49	100	2	4	6	11	12	23	64	65	129

TABLE 5.—*Percentage Distribution in Age Groups by Sex and Result*

Age Group	Percentage Benefited			Percentage Equivocal			Percentage Not Benefited			Total Percentage		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0- 4 months	100.0	.....	50.0	.....	.....	.....	.....	100.0	50.0	50.0	50.0	100.0
5- 8 months	.....	.....	.....	.....	.....	.....	100.0	.....	100.0	100.0	.....	100.0
9-12 months	.....	100.0	100.0	.....	.....	.....	.....	.....	.....	.....	100.0	100.0
13-18 months	80.0	83.3	81.8	.....	.....	.....	20.0	16.7	18.2	45.5	55.5	100.0
19-24 months	.....	100.0	100.0	.....	.....	.....	.....	.....	.....	.....	100.0	100.0
2- 3 years	73.0	69.0	71.2	5.4	10.3	7.6	21.6	20.7	21.2	56.1	43.9	100.0
4- 5 years	100.0	88.9	94.1	.....	11.1	5.9	.....	.....	.....	47.1	52.9	100.0
6- 7 years	80.0	71.4	73.7	.....	.....	.....	20.0	28.6	26.3	26.3	73.7	100.0
8- 9 years	100.0	100.0	100.0	.....	.....	.....	.....	.....	.....	60.0	40.0	100.0
10 years and over	66.7	33.3	100.0	.....	.....	.....	.....	.....	.....	66.7	33.3	100.0
Total	79.7	75.4	77.5	3.1	6.2	4.7	17.2	18.4	17.8	49.6	50.4	100.0

TABLE 6.—*Percentage Distribution by Age Groups, Sex and Results*

Age Group	Percentage Benefited			Percentage Equivocal			Percentage Not Benefited			Total Percentage		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0- 4 months	2.0	....	1.0	....	....	....	....	8.3	4.3	1.6	1.5	1.6
5- 8 months	....	....	....	....	....	....	9.1	....	4.3	1.6	....	0.8
9-12 months	....	2.0	1.0	....	....	....	....	....	....	....	1.5	0.8
13-18 months	7.8	10.2	9.0	....	....	....	9.1	8.3	8.7	7.8	9.2	8.5
19-24 months	....	5.0	1.0	....	....	....	....	....	....	....	1.5	0.8
2- 3 years	52.9	40.8	47.0	100.0	75.0	83.3	72.7	50.0	61.0	57.7	44.7	51.1
4- 5 years	15.7	16.3	16.0	....	25.0	16.7	....	....	....	12.5	13.8	13.2
6- 7 years	7.8	20.4	14.0	....	....	....	9.1	33.4	21.7	7.8	21.6	14.6
8- 9 years	6.0	4.1	5.0	....	....	....	....	....	....	4.7	3.1	3.9
10 years and over	7.8	4.1	6.0	....	....	....	....	....	....	6.3	3.1	4.7
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

treated were given a 1:5,000 dilution of the antigen. Children up to 5 years of age were given 0.1 cc. on the first injection and 0.2 cc. for the remainder of a course of three inoculations. Initial inoculations for patients over 5 years of age consisted of 0.2 cc., which was increased to 0.4 cc. on the second injection and maintained at 0.4 cc. for the remainder of the course of six injections.

Beneficial results from the administration of flea antigen to susceptible persons consisted in smaller size of the incised wheal, shorter duration of the wheal and decrease of irritation and of pruritus. Some patients in McIvor and Cherney's series benefited from the first injection, others not until after the fifth or sixth injection. Some were relieved for two to three months, others were relieved permanently. In none of those treated with flea antigen could circulating antibodies or precipitins be demonstrated in the blood.

TABLE 7.—*Case and Percentage Distribution by Sex and Result*

Sex	Benefited		Equivocal		Not Benefited		Total	
	Number	%	Number	%	Number	%	Number	%
Male	51	51.0	2	33.3	11	47.8	64	49.6
Female	49	49.0	4	66.7	12	52.2	65	50.4
Total	100	100.0	6	100.0	23	100.0	129	100.0

TABLE 8.—*Average Ages for Entire Group and by Result Obtained*

Average age for entire group	4.4 years
Average age of benefited group	3.8 years
Average age of equivocal group	2.8 years
Average age of not benefited group	3.0 years

In 1943 McIvor and Cherney[3] gave flea antigen to 92 patients whose hypersensitiveness to flea bites was evidenced by urticarial reactions or asthmatic attacks as a result of flea bites. All benefited but 5, and 1 child was made worse by flea antigen.

In the present series 129 susceptible infants and children were given 136 courses of injections in an effort to determine objectively the effect of flea antigen on the duration of symptoms, presence of a wheal, irritation, pruritus and secondary infection. Each child served as his own control, since in each of these patients the symptoms had continued unabated for a period of from one week to one year.

TABLE 9.—*Case and Percentage Distribution by Number of Injections by Result*

Number of Injections	Benefited		Equivocal		Not Benefited		Total	
	No. of Cases	%	No. of Cases	%	No. of Cases	%	No. of Cases	%
1	10	100.0	..	....	..	....	10	100.0
2	10	90.9	..	....	1	9.1	11	100.0
3	16	88.9	..	....	2	11.1	18	100.0
4	47	68.1	5	7.3	17	24.6	69	100.0
5	6	85.7	..	....	1	14.3	7	100.0
6	11	78.6	1	7.1	2	14.3	14	100.0
Total	100	77.5	6	4.7	23	17.8	129	100.0

TABLE 10.—*Case and Percentage Distribution by Number of Injections and Result*

Number of Injections	Benefited		Equivocal		Not Benefited		Total	
	No. of Cases	%	No. of Cases	%	No. of Cases	%	No. of Cases	%
1	10	10.0	..	....	..	....	10	7.7
2	10	10.0	..	....	1	4.3	11	8.5
3	16	16.0	..	....	2	8.7	18	14.0
4	47	47.0	5	83.3	17	74.0	69	53.5
5	6	6.0	..	....	1	4.3	7	5.4
6	11	11.0	1	16.7	2	8.7	14	10.9
Total	100	100.0	6	100.0	23	100.0	129	100.0

The flea antigen used was the product prepared by the method developed by Reed and his associates. It consists of an extract of the whole fleas of cat, dog and human beings (Ctenocephalides felis, Ctenocephalides canis and Pulex irritans) in phenolated isotonic saline solution. An attempt was made to give children up to 5 years of age 0.1 cc. of flea antigen for the first injection and 0.2 cc. for the remainder of a course of at least three inoculations. For children over 5 years of age an attempt was made to give an initial subcutaneous dose of 0.2 cc. and 0.4 cc. for at least five subsequent injections given every other day. The course was repeated as indicated.

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[3] McIvor, B. C., and Cherney, L. S.: Clinical Use of Flea Antigen in Patients Hypersensitive to Flea Bites, Am. J. Trop. Med. **23**: 377-379 (May) 1943.

The cases have been grouped in three tables according to the results obtained. Table 1 includes patients benefited by flea antigen. Table 2 includes the group whose benefit from flea antigen was equivocal. Table 3 consists of the group who received no benefit from flea antigen.

COMMENT

One hundred and twenty-nine susceptible infants and children, all living in the southern area of Richmond, Calif., were immunized against flea bites by the method of Reed and his associates. Of these, 100, or 78 per cent, were benefited. Six patients, or 5 per cent of the total, received equivocal benefit. Twenty-three, or 17 per cent, failed to respond.

The average age of these patients was 4 years. Of the 129, 68, or 50.4 per cent, were females, and 64, or 49.6 per cent, males. There were only 2 colored patients in the entire group (1.6 per cent), even though the colored group in the general population here is much higher.

Sixty-one patients offered data regarding duration of symptoms. Twenty-six patients (43 per cent) had symptoms from one week to one month before therapy. Twenty-five patients (41 per cent) had symptoms from one month to one year before the institution of flea antigen. Ten patients (16 per cent) gave a history of relative symptoms of over one year preceding therapy.

The presence of an incised wheal was observed in 109 patients (84 per cent). Of these, 3 had papules only, 1 had a bullous reaction and 3 had definite urticaria. In 20 patients (16 per cent) no wheal was seen. All patients had irritation and pruritus. Secondary infection was noted in 20 patients (16 per cent). Of these, 3 had impetigo contagiosa.

In treating these patients, the average number of injections of flea antigen given was four. The average time of response following the initial injection was eight days.

CONCLUSIONS

In a series of 129 susceptible infants and children, 4 out of 5 were benefited by the use of flea antigen. This constitutes a demonstration of one method of developing host immunity to insect bites. The importance of this demonstration lies in the possibility of the use of such a method as an adjunct in the control of insect borne diseases.

280 MacArthur Boulevard West, Oakland 11.

Common Errors in Statistical Interpretation of Medical Data.—Current medical literature is made up in great part of an analysis and an interpretation of clinical data: often a series of cases of a newly observed syndrome is reported. In other circumstances a study is made of the effect of a new surgical technic; frequently new methods of treatment are devised. These observations that have been made so painstakingly require suitable statistical analysis and interpretations. Are the results that have been secured of real significance or might the same results have been obtained by chance variation?—Smillie, Wilson G.: Preventive Medicine and Public Health, New York, Macmillan Company, 1946.

Clinical Notes, Suggestions and New Instruments

ACUTE OSTEOMYELITIS IN A NINETEEN DAY OLD INFANT

LIEUTENANT BERNARD H. SHULMAN (MC), U.S.N.R.

This is a report of a case of acute osteomyelitis in a 19 day old infant. Cases of osteomyelitis in childhood are not unusual but it is felt that the occurrence of this condition during the neonatal period is rare and worthy of recording. In addition, the therapeutic value of penicillin is demonstrated in controlling the acute phase of the infection.

REPORT OF CASE

D. D., a white boy aged 19 days, was admitted as a Navy dependent to the pediatric service of the Newport Hospital, Newport, R. I., because of elevated temperature and swelling of the left thigh of two days' duration.

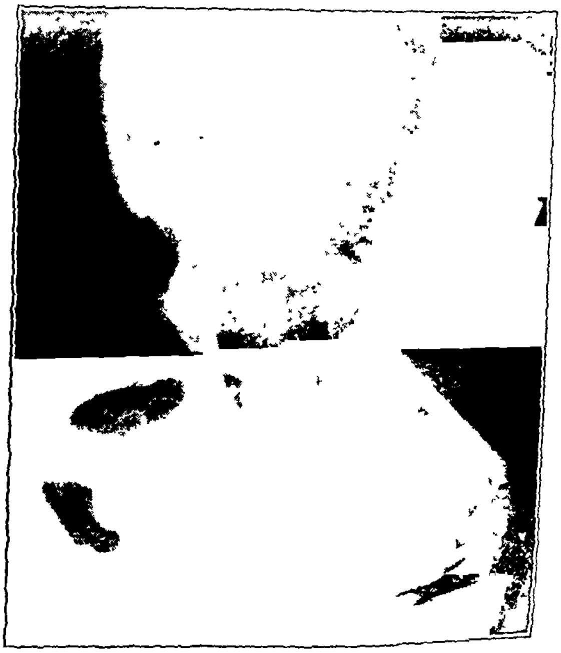

Fig. 1.—Appearance at time of admission, showing soft tissue swelling around the left femur. There is no evidence of pathologic change in the bones.

The infant was born at full term by spontaneous delivery and weighed 7 pounds 1 ounce (3,200 Gm.). He had an uneventful, afebrile, neonatal course in the nursery and was discharged on the ninth day of life after having reached birth weight. His formula consisted of an evaporated milk, water, dextrimaltose mixture.

The mother stated that the child seemed to cry when he was handled, shortly after reaching home. However, he took his formula readily and there were no visible signs of infection. Two days before admission, at the age of 17 days, the infant became restless, fed poorly and developed a fever of 102 F. At this time a swelling of the left thigh was observed, and two days later, at the age of 19 days, the child was admitted to the hospital.

On entry the child appeared acutely ill. The temperature was 100 F., the pulse rate 136 per minute and the weight 8 pounds 3 ounces (3,714 Gm.). Physical examination was negative except for the findings of the left leg. There was swelling of the left thigh, with tenseness and moderate fluctua-

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This article has been released for publication by the Division of Publications of the Bureau of Medicine and Surgery of the U. S. Navy. The opinions and views set forth in this article are those of the writer and are not to be considered as reflecting the policies of the Navy Department.

tion in the outer aspect. The leg was held in abduction and external rotation, with flexion at the hip and knee. The child cried with any attempt to move the affected leg actively.

The suspected deep abscess was aspirated and a small amount of green pus was obtained. Smear of this material showed many pus cells but no organisms. Culture of the material revealed unidentifiable gram-positive organisms.

On admission the white blood cell count was 21,200, with 72 per cent polymorphonuclears, 14 per cent lymphocytes and 14 per cent monocytes. The hemoglobin was 100 per cent and the red blood cells 3,500,000 per cubic millimeter. The urine was normal. An x-ray (fig. 1) taken shortly after admission showed soft tissue swelling at the upper part of the left leg There was no evidence of pathologic changes in the bones.

On the second hospital day 10 cc. of thick green pus was obtained by incision of the fluctuant, swollen thigh. Culture of this material revealed a pure growth of nonhemolytic Staphylococcus aureus. A blood culture, obtained with difficulty on the same day, was positive for nonhemolytic Staphylococcus albus This was felt to be a contaminant

Treatment was instituted immediately on hospitalization. Penicillin was given intramuscularly in doses of 10,000 units every three hours. In addition, local hot compresses were applied to the swollen thigh. The child received 40,000 units of penicillin on the first day and 80,000 units daily for the next seven days. On the ninth and tenth hospital days the child received 20,000 units daily. On the eleventh day the drug was discontinued. In all, the patient received 640,000 units of penicillin.

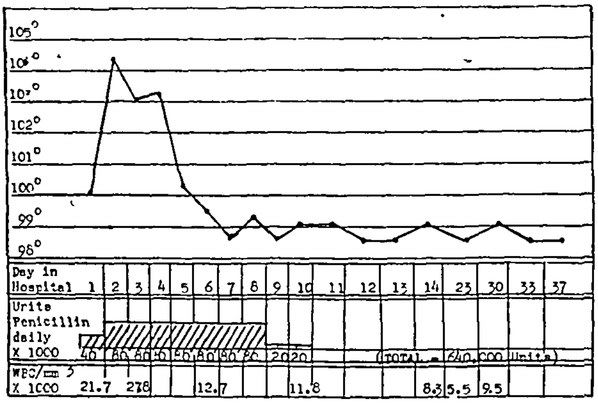


Fig 2—Course in the hospital

During the course of therapy the condition of the child improved remarkably. The temperature, which ranged from 100 to 104 F. during the first four days, returned to normal on the sixth day and stayed normal during the remainder of the period of hospitalization, as shown in figure 2 Frequent white blood cell counts showed a steady decline from a leukocytosis of 27,800 on the second day to 8,350 on the ninth day, with concomitant reduction of polymorphonuclears. The red blood cell count remained at approximately 3,500,000 per cubic millimeter.

A second x-ray (fig. 3), taken on the ninth hospital day, showed periosteal reaction and osteomyelitis of the upper third of the left femur. On the twenty-second hospital day another x-ray (fig. 4) of the left femur showed advanced osteomyelitis, with necrosis of the head

The general nutritional status was maintained by augmenting the regular formula with multivitamins, iron and calcium caseinate. The infant fed well and required no parenteral therapy. Weight gain was slow but steady.

After two weeks the child voluntarily moved the left leg, although he resented active movement. At no time was the leg placed in any orthopedic appliance.

On the thirty-seventh hospital day the child was discharged to the parents, who wished to return to their home following the impending honorable release of the father from active service with the U. S. Navy. The parents were advised to secure orthopedic care for the child soon after reaching their destination.

SUMMARY

1. Acute osteomyelitis occurred in a 19 day old infant. This seems to have been of hematogenous origin, and the etiologic agent was a nonhemolytic Staphylococcus aureus cultured from the pus following drainage of a communicating soft tissue abscess.

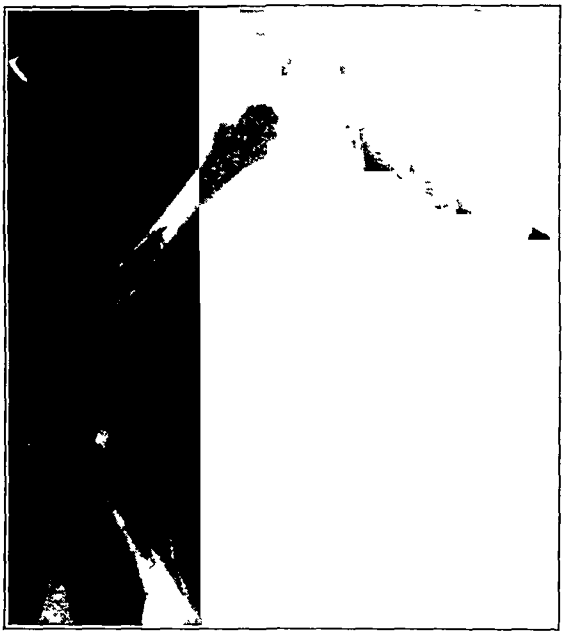


Fig 3—Appearance on the ninth day of hospitalization and eleven days after onset of local tissue swelling: periosteal reaction at the upper end of the left femur, with osteomyelitic process involving the upper third of the bone.

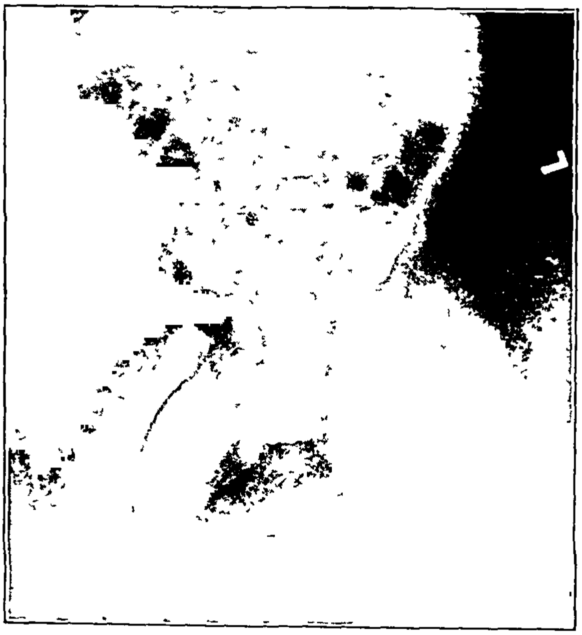


Fig 4.—Advanced osteomyelitic process of the upper third of the left femur on the twenty second hospital day, with loss of the anatomic contour of the head of the bone. Soft tissue calcification is present.

2. Penicillin was demonstrated to be life saving. The infant received a total of 640,000 units of calcium penicillin, given intramuscularly over a ten day period. The coincident reduction in temperature and reversion of the white blood cell count to normal paralleled the improvement in the patient's condition and occurred during the course of penicillin therapy.

3. X-rays showed bone changes in the evolution of the osteomyelitic process.

4. Further care of the patient was interrupted because of the parents' desire to travel home following the father's honorable discharge from the U. S. Navy.

DUODENAL BEZOAR RESULTING FROM PICA AND OBSTRUCTION OF MESENTERY ARTERY

GORDON McHARDY, M.D.
and
DONOVAN C. BROWNE, M.D.
New Orleans

Chronic duodenal dilatation and stasis created by an anomalously positioned superior mesenteric artery compressing the third portion of the duodenum where it traverses the spine is not unusual. This obstructive phenomena is commonly intermittent, varies greatly in degree of severity and most often is concomitant with the habitus asthenicus contributing in the production of the Weir-Mitchell individual, so common and chronic a problem to the gastroenterologist.

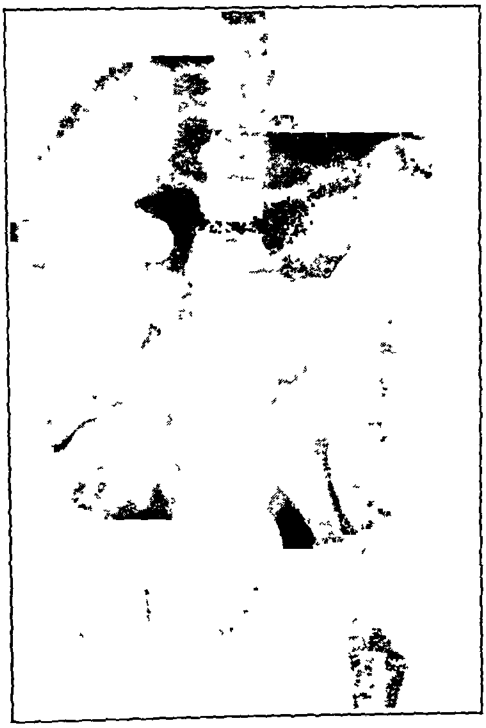


Fig. 1.—Extracolonic foreign bodies revealed with barium enema in vicinity of the right transverse process of the fourth lumbar vertebra.

Predisposition to foreign body retention or bezoar formation would seem likely in such individuals. A multitude of objects found in the duodenum and listed by Kellogg include pins, needles, buttons, coins, wood fragments, bones, nails, knives, spoons, buckles, false teeth, hair, pencils, esophageal instruments, prune and olive pits and string. Their retention therein was in no instance related to the type of duodenal obstruction under consideration. Reported bezoars of the duodenum have all been secondary, resulting from extension of a gastric bezoar. As such they are extremely rare; a primary duodenal bezoar enters into the realm of medical curiosities.

It is therefore justifiable to report a duodenal foreign body which in itemization qualifies as a bezoar. This duodenal accumulation had its causation in a pathologic individual in that organically the patient was proved to have an anomalous mesenteric artery position; mentally she ingested articles conducive to the creation of a bezoar.

REPORT OF CASE

J. P., *a girl aged 6 years, of French extraction,* had experienced *an uneventful childhood until six months* prior to our *seeing her on March 26, 1943.* The referring physician had *observed her for six months,* during which period she had retained a radiopaque foreign body, presumably a coin, in the same position in the enteric tract and had lost 7 pounds (3.2 Kg.). The weight loss in an already malnourished child with quantitative dyspepsia was coupled with episodes of nausea and emesis as the entire symptomatology.

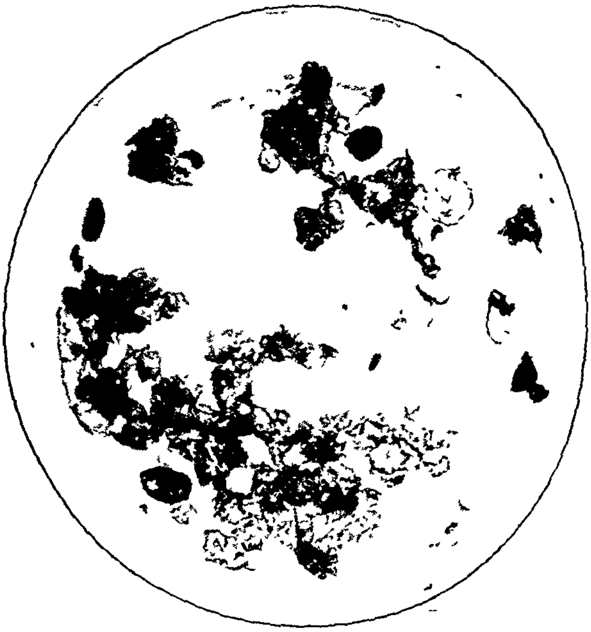


Fig. 2.—Portion of disintegrated bezoar removed from the duodenum at the first operation.

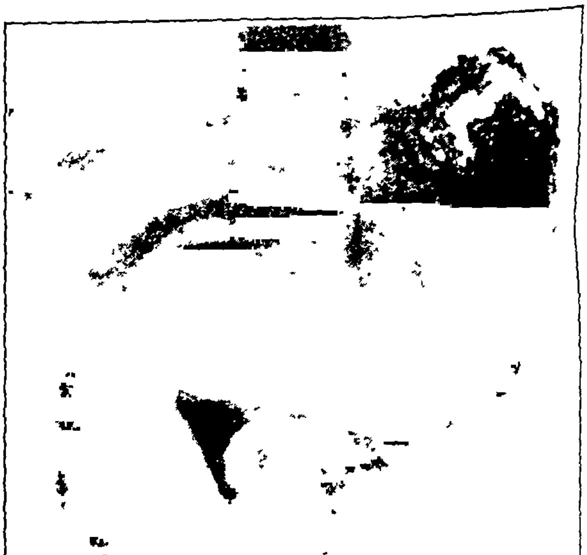


Fig. 3.—Barium delineation of the stomach and duodenum showing the duodenal enlargement and retention.

Physical findings other than evidence of malnutrition and niacin deficiency were those of asthenic habitus and leathery tan skin pigmentation like that of a Mediterranean, despite normal parental skin characteristics.

From the Department of Medicine, Tulane University Medical School, and the Gastrointestinal Department, *Touro Infirmary.*

Positive laboratory findings included a hypochromic microcytic anemia, lambliasis and amebiasis.

X-ray examination of the abdomen on March 26 revealed two radiopaque foreign bodies, one discoid and the other a ring, overlying the right transverse process of the fourth lumbar vertebra. On May 31 an additional foreign body, presumably a button, was present. In the interval the two varieties of intestinal parasites were eradicated. However, the patient's emesis became progressively severe, with apparent partial persistent high intestinal obstruction.

Surgical intervention was elected. On June 9 the bezoar was extracted by Dr. J. D. Rives from a tremendously distended duodenum; it was impossible to mobilize the bezoar back into the stomach. The duodenum was elongated, atonic and of a 3 inch diameter; it was sharply angulated at the site of definitely demonstrable mesenteric compression. There was no intraluminary obstruction. The patient's status at the time contraindicated further surgery.

An inventory of the bezoar revealed kapok, thread, a copper cent, a small gold plated ring, persimmon seeds and hull, prune pits, buttons, hair, watermelon seeds, vegetable débris, wood fragments, bone spicules, string, fragments of cloth and paper.

Temporary improvement and weight ensued on a low residue dietary regimen. However, a year subsequent recurrent symptoms indicated x-ray evaluation, which showed her status unimproved. On this occasion a gastrointestinal visualization demonstrated the obstructed duodenum as illustrated in figure 3.

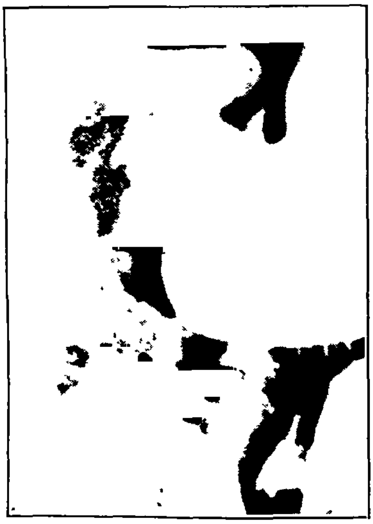


Fig. 4.—Delineation of the satisfactorily functioning duodenojejunostomy with return of essentially normal duodenal tonus.

On July 30 a duodenojejunostomy was done by Dr. Rives. Most recent evaluation on April 9, 1945 showed curative results with a well functioning duodenojejunostomy permitting normal gastrointestinal transfer of even the continued outlandish ingestions of the patient, who during operative convalescence was detected eating kapok from her pillow.

1534 Aline Street, New Orleans 15.

Place of Science in the Scheme of Culture.—This testing of the place of science in the scheme of culture has been general, but the issue has consequences so determining as to deserve and indeed require illustration in a special case. It is a situation which deserves careful analysis. Science having become decisive in many aspects of the practical life, in engineering, in pharmacology, in agriculture, citizens demand opportunity for becoming familiar with contributions now so vital to human comfort, not to say happiness. The orientation of nations differs and differs signally. One conspicuous difference is the American attitude toward science. The universities exhibit this attitude in a striking fashion reflecting, as they do, the national dependence on science.—Cohn, Alfred E.: Minerva's Progress, New York, Harcourt, Brace & Co., 1946.

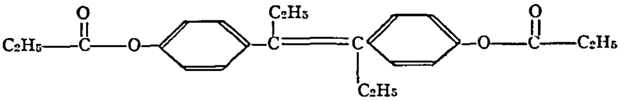
Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

DIETHYLSTILBESTROL DIPROPIONATE.—The *di*-propionyl ester of α,α′-diethyl-4,4′-stilbenediol.—$C_{24}H_{28}O$— M. W. 380.46.—Diethylstilbestrol diproprionate may be prepared by esterification of diethylstilbestrol with propionic acid chloride and purified by recrystallization from alcohol. It may be represented by the following structural formula:



Actions and Uses.—Diethylstilbestrol diproprionate is used for the same conditions for which estrogenic substances are employed, although it is claimed that reactions such as nausea and vomiting appear to be less frequent with a diproprionate salt than with free diethylstilbestrol when the drugs are administered intramuscularly in oil. Diethylstilbestrol dipropionate is relatively slowly absorbed from the oil depot and causes a lower blood stream concentration, although one of more prolonged duration.

Dosage.—Diethylstilbestrol Dipropionate in Oil is administered intramuscularly. The following average dosage by injection should be modified to meet individual requirements:

Menopause }
Senile vaginitis } from 0.5 to 2 mg. two or three times a week.
Suppression of lactation—5 mg. once or twice daily for a total of from two to four days.

After a therapeutic effect has been obtained, the dosage should be reduced until the minimum effective dose for maintenance has been established.

Tests and Standards.—

Diethylstilbestrol dipropionate occurs as an odorless, tasteless, white, crystalline powder which melts at 105-107 C. It is readily soluble in acetone, benzene, ether, chloroform, hot ethyl alcohol and hot methyl alcohol; soluble in vegetable oils; very slightly soluble in water and dilute mineral acids; and insoluble in alkaline aqueous solutions.

Dissolve 10 mg. of diethylstilbestrol dipropionate in 2 cc. of concentrated sulfuric acid: an orange color is produced which disappears on dilution with water. Add 1 cc. of 50 per cent solution of antimony pentachloride in dry alcohol-free chloroform to 5 cc. of a dilute solution of diethylstilbestrol dipropionate in the same solvent: a red colored solution is produced. The residue obtained in the assay for diethylstilbestrol dipropionate melts at 168-171 C. and responds to tests for diethylstilbestrol.

Dry an accurately weighed specimen of diethylstilbestrol dipropionate to constant weight in a partial vacuum at 80 C.: the loss in weight does not exceed 0.5 per cent. Ignite an accurately weighed specimen of diethylstilbestrol dipropionate after the addition of concentrated sulfuric acid: the residue does not exceed 0.05 per cent. A suspension of 0.1 Gm. of diethylstilbestrol dipropionate in 10 cc. of diluted alcohol is neutral to litmus paper.

Dissolve approximately 0.3 Gm. of diethylstilbestrol dipropionate, accurately weighed, in 10 cc. of a 15 per cent solution of potassium hydroxide in methyl alcohol and heat under reflux for thirty minutes. Cool, dilute with 100 cc. of water, transfer to a separator and acidify with dilute hydrochloric acid. Extract the mixture with four separate portions of ether, combining the ether extracts; wash the ether solution with three separate portions of 5 per cent sodium bicarbonate solution and once with water; decant the ether solution through a small cotton plug into a tared beaker; rinse the separator and cotton plug with fresh ether and evaporate the ether extract in a stream of warm air. Dry the residue to constant weight at 75-80 C.: the weight of the diethylstilbestrol obtained, multiplied by the factor 1.418, is equivalent to not less than 98 per cent nor more than 100.5 per cent of the weight of the specimen.

The following dosage form has been accepted:

Winthrop Chemical Company, Inc., New York

Solution Diethylstilbestrol Dipropionate (in Olive Oil): 0.5 mg. per cc., 1 mg. per cc. and 5 mg. per cc.: 1 cc. ampuls.

HEXAVITAMIN (See The Journal, Aug. 11, 1945, p. 1099).

The following dosage form has been accepted:

Walker Vitamin Products, Inc., Mount Vernon, N. Y.

Capsules Hexavitamin: Each capsule contains 2,500 U. S. P. units of vitamin A, 200 U. S. P. units of vitamin D, 1 mg. of thiamine, 1.5 mg. of riboflavin, 30 mg. of ascorbic acid and 10 mg. of niacinamide.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

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SATURDAY, MARCH 30, 1946

RETIREMENT OF DR. OLIN WEST, SECRETARY-GENERAL MANAGER

According to the official announcement from the Board of Trustees which appears elsewhere in this issue, Dr. Olin West, Secretary-General Manager of the American Medical Association for more than twenty-three years, retires from his official duties on April 1. The intense devotion of almost a quarter of a century of unremitting diligence in behalf of the progress of the American Medical Association and of its policies for the maintenance of medicine as a profession has taken a considerable toll of his energy.

Dr. Olin West came to the American Medical Association with a record of experience in medicine and public health that especially fitted him for the positions that he assumed. His preliminary education was received at Howard College in Alabama, in which state he was born at Gadsden on July 12, 1874. He graduated from Vanderbilt University School of Medicine, Nashville, Tenn., in 1898. In 1910, after twelve years of practice in Nashville and fifteen years as a member of the faculty of Vanderbilt University, first as instructor and later as assistant professor and associate professor in chemistry, Dr. West became director for the Rockefeller Sanitary Commission and International Health Board in Tennessee. Here he was especially effective in the great campaign against hookworm infection. In 1918 he became secretary and executive officer of the Tennessee State Board of Health and after four years gave up that position to become field secretary of the American Medical Association in association with Dr. Alexander Craig, who was at that time Secretary. Following the death of Dr. Craig, Dr. West was appointed Secretary by the Board of Trustees. Then when Dr. George H. Simmons resigned as Editor and General Manager of the Association in 1924, Dr. West continued in the position of Secretary and succeeded to the duties of General Manager.

In early activities for the organized medical profession Dr. West was president of the Middle Tennessee Medical Association and later secretary of the Tennessee State Medical Association and editor of its journal. His love for the art and tradition of medical science, his great personal compassion, his geniality and his friendliness have endeared him personally to many thousands of American physicans who have met him in office and who have had advantage of his personal counsel and judgment.

The Journal wishes to Dr. West on his retirement many years of healthful life and many hours in which he can devote himself to his family and his friends, realizing at the same time that his interest in medicine and particularly in the advancement of the American Medical Association will never lag. Certainly the committees and the councils of the Association will continue to utilize as far as possible the experience and the judgment which have meant so much toward achieving the high place that the American Medical Association occupies today among medical organizations throughout the world.

BRITAIN'S NATIONAL HEALTH ACT

Regardless of the preliminary publicity and the prolonged incubation period, the announcement of the proposals for the nationalization of medical services in Great Britain was startling. Apparently the British government proposes to take over—in every sense of those words—the hospitals and the medical practices of British physicians. Thus a nation which fought to a successful issue against totalitarianism now proposes to enslave its own medical profession and to make of every one of its physicians a clock-watching civil servant. Men who formerly devoted their lives wholeheartedly to the care of the sick and to the relief of pain and suffering will now be spending their hours trying to satisfy the whims of the bureaucrats and to disencumber themselves from the red tape that bureaucrats inevitably weave. What the government leaders urge as a step forward in the prevention and control of disease will be considered by representatives of medical science everywhere as one of the most backward steps ever conceived for a civilized nation.

In an address on "The Science and Art of Medicine" delivered by Sir Lionel Whitby as his inaugural lecture as regius professor of physic in Cambridge University, the distinguished British physician said:

> The simple facts are that medicine is both a science and an art. It is true that medicine will never be an exact science, because the normal variations in individuals have such a wide range that automatic and mechanical treatment is prohibited,

> whilst every patient requires a different method of approach according to his psychology. This, the frequently ridiculed bedside manner, which secures the confidence of the patient, is of fundamental importance in practice; it is an art which is inborn and not acquired. Nevertheless, even the most confirmed artist cannot now neglect to keep up to date with the facts and findings of science upon which his diagnosis and treatment must be based. Nor will the artistic claim be very sympathetically received by a court of law, should the claimant have neglected the scientific aspect. But one of the attractions of the profession is the personal and individual character of its practice: the latitude with which a qualified doctor may exercise his own judgment, express his own opinions and practice his own art. *This, indeed, is one of the strongest objections to nationalization and standardization. If the profession of medicine be robbed of its scope for individuality, the soul will go out of it* [italics ours].

Thus from a British leader comes new emphasis on the points that great American physicians have emphasized in their opposition to socialized or political medicine.

During the great war just ended scientific medicine advanced tremendously. The development of the antibiotic drugs, of blood derivatives, of new surgical technics, of controls over insect borne diseases are among the steps that will increase life expectancy and even perhaps reduce the incidence of such diseases as pneumonia and the venereal diseases, as typhoid and diphtheria have been decreased. In the face of constant advancement and ever diminishing morbidity and mortality the politicians would promote a revolution in methods of medical education, medical research and medical care, unthinking that the steps they propose may halt if not destroy the scientific medical forces that have yielded these results.

Especially sad is the British proposal that the government take over the private hospitals which have been the pride of the democracies for more than a century. Our Catholic, Protestant and Jewish hospitals have grown out of that fundamental tenet of all great religions that the care of the sick is one of the highest spiritual motives to which man can attain. Britain's act proposes that these hospitals become creatures of an automatic routine ridden government bureaucracy. Thus sick human beings would become cards in a government index representing robots, which, when incapacitated, would receive the ministrations of employed doctors reduced to the status of subservient mechanics.

Perhaps the long controversial debate to which this arbitrary and revolutionary legislation is certain to be subjected in the British parliament will develop some means for retaining in Great Britain the spirit and the tradition that have earned for British medicine up to now the respect of scientists throughout the world.

STREPTOMYCIN THERAPY OF WHOOPING COUGH

Encouraging data as to the therapeutic effects of streptomycin in the treatment of experimental murine pertussis are reported by Bradford and Day[1] of the Department of Pediatrics, University of Rochester. Three week old Swiss mice were inoculated intranasally with 0.05 cc. of a suspension of freshly isolated Hemophilus pertussis. The inoculations were usually made in subgroups of 5 mice, the doses given to the different subgroups being approximately 125, 31.2, 7.8, 1.9 and 0.47 million micro-organisms, or a 1:4 serial dilution of the initial suspension. After inoculation the mice were kept under uniform environmental conditions for a ten day period, with deaths recorded daily. At the end of the ten day period necropsies were performed on the surviving mice and cultures made from their lungs.

In a typical experiment 40 mice were inoculated with 1:4 serial dilutions in five duplicate subgroups. Four hours later, five subgroups were injected subcutaneously with 130 units of streptomycin. This dose was repeated every six hours for the next five days. Five control or untreated subgroups were injected with an equal volume (0.2 cc.) of saline solution. In the five treated subgroups there was but one fatality. This was in the subgroup given the largest infectious dose (125 million H. pertussis). Of the 19 surviving mice in the treated subgroups, 14 had sterile lungs at the end of ten days. Among the untreated control subgroups 9 mice died. But 2 of the 11 survivors in the untreated groups gave negative pulmonary cultures. The calculated 50 per cent minimum lethal dose for the treated groups was more than 125 million micro-organisms. For the untreated groups the calculated 50 per cent minimum lethal dose was 12.7 million. This suggests that there was a tenfold increase in natural pertussis resistance as the result of streptomycin therapy.

In a second experiment with a slightly more virulent strain of H. pertussis there was a 100 per cent survival with sterile lungs following 250 unit doses of streptomycin given intra-abdominally four times daily for five days. In the untreated control subgroups (20 mice) there were but 5 survivors. Only 1 of these had sterile lungs. In a parallel therapeutic test with penicillin there were 7 survivors with 2 sterile lungs. Penicillin is thus without therapeutic promise.

The therapeutic value of streptomycin as indicated by these and other data is sufficient to justify its trial in human medicine. Clinical trials are now in progress in the Department of Pediatrics, Rochester University.

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[1] Bradford, W. L., and Day, E.: Proc. Soc. Exper. Biol & Med. **60**: 324 (Dec.) 1945.

Current Comment

THE PERIODICITY OF INFLUENZA

Many attempts have been made to find a cyclic pattern for influenza and to determine its periodicity. In a recent communication[1] from the Commission on Acute Respiratory Diseases the previous theories have been reviewed and the problem reconsidered in the light of experiences between 1920 and 1944. The report points out that there have been sixteen widespread epidemics of influenza in the United States since 1920. The analysis of the patterns of these epidemics led to advancing the theory that they could be accounted for on the basis of two specific recurring infections. According to the interpretation it appears that influenza A has a cycle of two to three years and influenza B a cycle of four to six years. Evidence that other influenza viruses have caused epidemics of a widespread nature during the past twenty-five years was not obtained. The hypothesis is also advanced that the occurrence of influenza epidemics is determined principally by the balance relationship between immune and susceptible persons in the community. The commission has, moreover, hazarded a forecast of the probability of occurrence of further epidemics of influenza within certain time limits. The study has been hampered by the inability to determine which influenza viruses were responsible for the earlier epidemics; only recently could this be determined. The prophecy made may or may not prove accurate. Whenever a forecast of this type can be made successfully the possibilities of controlling epidemics of influenza will be greatly improved.

PLANNING BY THE COMMONWEALTH FUND

In the Annual Report of the Commonwealth Fund, 1945,[1] Mr. Barry C. Smith takes the President's health message as a challenge to American medicine to prove that it can do the job better than can the government. "When wholesale extension of medical and hospital services is proposed," says the report, "it is time to ask more critically than ever before whether those services are as nearly right for the functions they are intended to fulfil as hard, clear thinking can make them." Mr. Smith feels that the most conspicuous defect in the medical picture is the paucity of well trained people. The previous experience of the Commonwealth Fund leads to the conviction that rural medicine will continue to lag until rural physicians are far better trained than they are today and that public health service lags for a lack of health officers competent to do more than a routine job. Mr. Smith says also that the number of well or indifferently trained psychiatrists is too few to cope with the present distribution of mental disease and marginal disability. Moreover, the report asserts it is not alone the quantity but the quality of professional training that needs attention. Because of the many questions that have not been solved as to patterns of action, the Commonwealth Fund is determined to keep its relatively small resources and its policy fluid until the place of philanthropic funds in these shifting patterns becomes clear. For that reason the objectives to be supported by this foundation during the next period will include:

1. Sound training for professional and technical workers in strategic phases of health maintenance.
2. The broadening and integration of the basic concepts of medical care so that it may become truly comprehensive.
3. The practical encouragement of human curiosity as the fountainhead from which medical knowledge renews itself.

Among the special projects in which this fund will be engaged is an attempt to increase the educational qualifications of certain hospitals by supplying them with educational supervisors who will furnish guidance in the education of house officers. In several institutions attempts are being made to integrate psychiatry and internal medicine. Most important, however, is a large scale experiment which is being developed near Rochester, N. Y., with a view to showing how the existing resources of rural medicine can profitably be supplemented by those of a regional center. The plan involves a linking of the rural hospitals in seven counties near Rochester with the institutions in Rochester with a view to providing a high type of medical care throughout the area.

LOS ANGELES COUNTY MEDICAL ASSOCIATION CELEBRATES SEVENTY-FIFTH ANNIVERSARY

On the last evening of January in 1871 a group of seven Los Angeles physicians organized the Los Angeles County Medical Association. At that time the official population of Los Angeles was 6,598 and that of Los Angeles County, which included what is now Orange County, was about 16,000. During the interval since its organization Los Angeles has become one of the world's largest cities and the county one of the most heavily populated in the country. The Los Angeles County Medical Association has grown correspondingly. Its Bulletin for January 31 celebrates with a seventy-fifth anniversary number, reviewing the history of the association. This issue of the Bulletin contains information of historical value. Both the Los Angeles County Medical Association and its Bulletin can be congratulated on their contributions to the health of the community and to the advancement of the medical profession during a period of phenomenal growth.

RADIO TRANSCRIPTS ON MEDICAL CARE PROBLEMS

Elsewhere in this issue (page 881) appears an announcement of a series of six radio transcriptions on subjects of economic medicine. These have been prepared by the Council on Medical Service and Public Relations in cooperation with the Bureau on Health Education of the A. M. A. They represent an additional service furnished by the Council and the Bureau which is now available to local medical societies.

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[1] The Commission on Acute Respiratory Diseases, Fort Bragg, North Carolina: The Periodicity of Influenza, Am. J. Hyg. 43:29 (Jan.) 1946.

[1] Twenty-Seventh Annual Report of the General Director for the Year Ending September 30, 1945, New York, Commonwealth Fund, 1946.

NATIONAL HEALTH PROGRAM OF THE AMERICAN MEDICAL ASSOCIATION

Adopted by the Board of Trustees and the Council on Medical Service, Feb. 14, 1946

1. The American Medical Association urges a MINIMUM STANDARD OF NUTRITION, HOUSING, CLOTHING AND RECREATION as fundamental to good health and as an objective to be achieved in any suitable health program. The responsibility for attainment of this standard should be placed as far as possible on the individual, but the application of community effort, compatible with the maintenance of free enterprise, should be encouraged with governmental aid where needed.

2. The provision of PREVENTIVE MEDICAL SERVICES through professionally competent health departments with sufficient staff and equipment to meet community needs is recognized as essential in a health program. The principle of federal aid through provision of funds or personnel is recognized with the understanding that local areas shall control their own agencies as has been established in the field of education. Health departments should not assume the care of the sick as a function, since administration of medical care under such auspices tends to a deterioration in the quality of the service rendered. Medical care to those unable to provide for themselves is best administered by local and private agencies with the aid of public funds when needed. This program for national health should include the administration of MEDICAL CARE, INCLUDING HOSPITALIZATION TO ALL THOSE NEEDING IT BUT UNABLE TO PAY, such medical care to be provided preferably by a physician of the patient's choice with funds provided by local agencies with the assistance of federal funds when necessary.

3. The procedures established by modern medicine for advice to the prospective mother and for ADEQUATE CARE IN CHILDBIRTH should be made available to all at a price that they can afford to pay. When local funds are lacking for the care of those unable to pay, federal aid should be supplied with the funds administered through local or state agencies.

4. The child should have throughout infancy PROPER ATTENTION, INCLUDING SCIENTIFIC NUTRITION, IMMUNIZATION AGAINST PREVENTABLE DISEASE AND OTHER SERVICES INCLUDED IN INFANT WELFARE. Such services are best supplied by personal contact between the mother and the individual physician but may be provided through child care and infant welfare stations administered under local auspices with support by tax funds whenever the need can be shown.

5. The provision of HEALTH AND DIAGNOSTIC CENTERS AND HOSPITALS necessary to community needs is an essential of good medical care. Such facilities are preferably supplied by local agencies, including the community, church and trade agencies which have been responsible for the fine development of facilities for medical care in most American communities up to this time. Where such facilities are unavailable and cannot be supplied through local or state agencies, the federal government may aid, preferably under a plan which requires that the need be shown and that the community prove its ability to maintain such institutions once they are established (Hill-Burton bill).

6. A program for medical care within the American system of individual initiative and freedom of enterprise includes the establishment of VOLUNTARY NONPROFIT PREPAYMENT PLANS FOR THE COSTS OF HOSPITALIZATION (such as the Blue Cross plans) and VOLUNTARY NONPROFIT PREPAYMENT PLANS FOR MEDICAL CARE (such as those developed by many state and county medical societies). The principles of such insurance contracts should be acceptable to the Council on Medical Service of the American Medical Association and to the authoritative bodies of state medical associations. The evolution of voluntary prepayment insurance against the costs of sickness admits also the utilization of private sickness insurance plans which comply with state regulatory statutes and meet the standards of the Council on Medical Service of the American Medical Association.

7. A program for national health should include the administration of MEDICAL CARE, INCLUDING HOSPITALIZATION, TO ALL VETERANS, such medical care to be provided preferably by a physician of the veteran's choice, with payment by the Veterans Administration through a plan mutually agreed on between the state medical association and the Veterans Administration.

8. RESEARCH FOR THE ADVANCEMENT OF MEDICAL SCIENCE is fundamental in any national health program. The inclusion of medical research in a National Science Foundation, such as proposed in pending federal legislation, is endorsed.

9. The services rendered by VOLUNTEER PHILANTHROPIC HEALTH AGENCIES such as the American Cancer Society, the National Tuberculosis Association, the National Foundation for Infantile Paralysis, Inc., and by philanthropic agencies such as the Commonwealth Fund and the Rockefeller Foundation and similar bodies have been of vast benefit to the American people and are a natural outgrowth of the system of free enterprise and democracy that prevail in the United States. Their participation in a national health program should be encouraged, and the growth of such agencies when properly administered should be commended.

10. Fundamental to the promotion of the public health and alleviation of illness are WIDESPREAD EDUCATION IN THE FIELD OF HEALTH and the widest possible dissemination of information regarding the prevention of disease and its treatment by authoritative agencies. Health education should be considered a necessary function of all departments of public health, medical associations and school authorities.

MEDICINE AND THE WAR

ARMY

ENLISTED MEN ASSIGNED TO THE ARMY SPECIALIZED TRAINING PROGRAM

Following is a government release known as ASF Cir. 56 discussing the disposition of enlisted men assigned to the Army Specialized Training Program for medical training:

2. *Disposition of enlisted men assigned to ASTP for medical training.* *a.* Enlisted men assigned to ASTP for medical training who are scheduled to graduate from medical school before 1 July 1946 will not be separated from the Army regardless of age, length of service, critical score, or by virtue of having three or more children under 18 years of age. They will not be permitted to enlist in the Regular Army. They may be separated under existing regulations pertaining to discharge of enlisted men because of undue hardship or because of importance to national health, safety or interest. They will not be separated for any other reasons except as individually authorized by the War Department.

b. Enlisted men assigned to ASTP for medical training who are not scheduled to graduate from medical school prior to 1 July 1946 will be disposed of as follows:

(1) Those enlisted men who meet current War Department criteria for separation may be discharged.

(2) Those enlisted men who are eligible for discharge under 30 April or 30 June criteria and who do not plan to continue their medical studies may be reassigned within the service command until the date of their discharge if their services are needed. If their services are not needed, they will be discharged.

(3) Those enlisted men who do not meet War Department criteria for separation, who do not plan to continue their medical studies, or are not acceptable at an accredited medical school will be transferred to Brooke Army Medical Center, Fort Sam Houston, Texas.

(4) Those enlisted men who are not eligible for separation who signify their intention to continue their medical studies and are acceptable at an accredited medical school will be released from active federal service and transferred to the Enlisted Reserve Corps. Authority for such release will be section I, AR 615-363, and this circular. These men will furnish a certificate from the dean or other similar official of a medical school approved by the Council on Medical Education and Hospitals of the American Medical Association.

HOLD OPHTHALMOLOGIC CONFERENCE AT VALLEY FORGE

A trisession conference of civilian doctors and Army Medical Corps officers specializing in ophthalmology and related plastic surgery was held recently at Valley Forge General Hospital, Phoenixville, Pa. A total of 70 ophthalmologic cases were examined and discussed during the conference, which was opened with a discussion on "Military Plastic Surgery" by Lieut. Col. Bradford Cannon, chief of the Valley Forge General Hospital plastic surgery section. Lieut. Col. Phillips Thygeson, chief of the eye, ear, nose and throat section, presided.

MEDICAL CARE FOR DEPENDENTS

Plans to provide complete and free medical care for dependents of U. S. Army personnel who will arrive in Germany from the United States are now being formed. A particular effort will be made by the Preventive Medicine Division of the Surgeon General's Office to furnish parents with all known facts on contagious diseases prevalent in Germany, especially those to which children are most susceptible, and methods of preventing these diseases. A child health program will be handled by army physicians experienced in the field.

APPOINTED DIRECTOR OF SURGICAL CONSULTANTS DIVISION

Col. Frank L. Cole, formerly commanding officer of Wakeman Hospital Center, Camp Atterbury, Indiana, was recently assigned to relieve Col. Michael E. DeBakey as director of the Surgical Consultants Division, Office of the Surgeon General. Dr. Cole graduated from the University of Illinois College of Medicine, Chicago, in 1914 and was commissioned in the Army Medical Corps in 1917.

ASSIGNED TO ARMY INSTITUTE OF PATHOLOGY

Col. Raymond O. Dart, deputy chief surgeon for the American Forces in the Western Pacific, was recently appointed assistant director of administration, Army Institute of Pathology. Dr. Dart graduated from Rush Medical College, Chicago, in 1916 and entered the service in 1917.

ANNUAL MEETING OF ARMY EPIDEMIOLOGICAL BOARD

The annual meeting of the Army Epidemiological Board will be held April 15-16 in the board room of the National Academy, National Research Building, 2101 Constitution Avenue, Washington, D. C.

ARMY AWARDS AND COMMENDATIONS

Colonel Bruce P. Webster

Col. Bruce P. Webster, New York, was recently presented the Legion of Merit "for exceptionally meritorious conduct in the performance of outstanding services in the Southwest Pacific Area from Sept. 16, 1944 to Oct. 15, 1945. As surgeon, Replacement Command, United States Army Forces in the Far East, Colonel Webster developed the Medical Service within the Replacement Command into an outstanding agency and in addition planned and executed the expeditious processing and assignment of incoming medical department personnel. Subsequently, as director of the control division, Chief Surgeon's Office, General Headquarters, United States Army Forces, Pacific, he was highly successful in initiating and supervising effective measures for the control of venereal disease, care of liberated prisoners of war and medical training of amphibious troops. As senior representative, Office of the Chief Surgeon, Advance Echelon, General Headquarters, he displayed unusual resourcefulness in establishing an echelon of the policies for the expeditious recovery, hospitalization, evacuation and processing of liberated prisoner of war patients. Through his ceaseless effort, extensive professional skill and devotion to duty, Colonel Webster made a distinct contribution to the success of medical service in the Southwest Pacific Area." Dr. Webster graduated from McGill University Faculty of Medicine, Montreal, in 1925 and entered the service July 1, 1942.

Lieutenant Colonel Ronald H. Kettle

The Bronze Star was recently awarded to Lieut. Col. Ronald H. Kettle of the Norwich State Hospital, Norwich, Conn., "for meritorious service in connection with military operations against the enemy from Dec. 5, 1944 to Sept. 2, 1945." Dr. Kettle graduated from Queen's University Faculty of Medicine, Kingston, Ont., in 1928 and entered the service Oct. 17, 1942.

Major Franklin D. Rodabaugh

Major Franklin D. Rodabaugh, Toledo, was recently awarded the Legion of Merit for "exceptionally meritorious conduct in the performance of outstanding services from May 11, 1944 to Jan. 22, 1945." Dr. Rodabaugh graduated from Ohio State University College of Medicine, Columbus, in 1941 and entered the service Aug. 1, 1942.

Captain Robert E. Vorisek

The Bronze Star was recently awarded to Capt. Robert E. Vorisek, New York, for "meritorious achievement in connection with military operations against the enemy on Mindanao, Philippine Islands, from April 17 to Aug. 1, 1945." Dr. Vorisek graduated from Long Island College of Medicine, Brooklyn, in 1941 and entered the service Dec. 30, 1942.

NAVY

EXAMINATIONS FOR APPOINTMENTS AS ASSISTANT SURGEONS

The Bureau of Medicine and Surgery, Navy Department, will convene boards of medical examiners and supervisory naval examining boards May 6-10 at twenty-nine continental United States naval hospitals for the purpose of conducting physical and professional examinations of eligible candidates for appointment to the grades of assistant surgeon and acting assistant surgeon in the U. S. Navy.

The primary purpose behind the setting up of these examinations for appointment to the grade of assistant surgeon has been to establish a channel of appointment for medical officers of the U. S. Naval Reserve who have not served on active duty in commissioned rank for a period of six months. The medical officers of the Naval Reserve within this category are those who have been deferred from active duty under the provisions of the 9-9-9 program and whose total service in commissioned status has been purely inactive in that their training under the conditions of this program have been performed in civilian medical institutions. This is not intended, however, to exclude from participation in these examinations doctors having no affiliation with the Navy, and it is desired to emphasize that applications are invited from all physicians who meet the requirements for appointment to the Medical Corps of the U. S. Navy.

The examinations to be conducted for appointment to the grade of acting assistant surgeon for naval internship will be a departure from the current system of intern appointments in that during the latter years of the war it has been the practice of the Navy Department to appoint qualified medical school graduates to the rank of lieutenant (jg), (MC), U.S.N.R. for naval intern training from a review of credentials submitted by candidates to the Bureau of Medicine and Surgery. In line with the schedule of demobilization and a transition to peacetime operations it has been deemed necessary that the bureau resume the prewar procedure of professionally examining senior medical students for appointment to the grade of acting assistant surgeon in the rank of lieutenant (jg), (MC), U.S.N., for naval internship on completion of their medical education and thus insure the availability of an adequate number of properly qualified appointees at appropriate periods.

The general qualifications for appointment in the Medical Corps of the U. S. Navy are as follows:

> A candidate is required to be a citizen of the United States, of more than 21 but less than 32 years of age at the time of appointment and a graduate of or a student in a medical school listed as approved by the Council on Medical Education and Hospitals of the American Medical Association. The age, physical and citizenship requirements for appointment as acting assistant surgeon and assistant surgeon in the Medical Corps of the U. S. Navy are the same.
>
> Candidates for appointment as assistant surgeon are required to be graduates of medical schools listed as approved by the Council on Medical Education and Hospitals of the American Medical Association who have completed their intern training in a civilian or naval hospital or who will complete such training within four months of the date of the examination and who are physically and in other respects qualified.
>
> A candidate for appointment as acting assistant surgeon for intern training is required to be a third or fourth year medical student enrolled in a medical school listed as approved by the Council on Medical Education and Hospitals of the American Medical Association. Third year medical students may apply only for an examination which will be held subsequent to date of completion of their third year of medical school. If found to be physically, professionally and in other respects qualified, successful candidates will receive their appointments on satisfactory completion of their medical school education. For further information, application forms for appointment and other data address the Bureau of Medicine and Surgery, Navy Department, Washington 25, D. C.

The examination will be given at the naval hospitals in Annapolis, Md.; Astoria, Ore.; Bainbridge, Md.; Bethesda, Md.; Brooklyn; Camp LeJeune, N. C.; Charleston, S. C.; Chelsea, Mass.; Corpus Christi, Texas; Dublin, Ga.; Great Lakes, Ill.; Jacksonville, Fla.; Key West, Fla.; Long Beach, Calif.; Mare Island, Calif.; Memphis, Tenn.; New Orleans; Newport, R. I.; Norman, Okla.; Oakland, Calif.; Parris Island, S. C.; Pensacola, Fla.; Philadelphia; Portsmouth, N. H.; Portsmouth, Va.; Quantico, Va.; Sampson, N. Y.; San Diego, and Seattle.

NAVY AWARDS AND COMMENDATIONS

Rear Admiral Luther Sheldon Jr.

The Legion of Merit was recently presented to Rear Admiral Luther Sheldon Jr., who is now medical officer for the Fifth Naval District, Norfolk, Va., for exceptionally meritorious conduct in the performance of service to the government as assistant to the chief of the Bureau of Medicine and Surgery, Navy Department, from June 26, 1940 to Nov. 25, 1944. "By his broad vision, professional integrity and tireless efforts in discharging the responsibilities of this important duty," said the citation, "Rear Admiral Sheldon rendered immeasurable assistance to the chief of the bureau in rapidly expanding hospital facilities within the Continental United States and at advance bases to meet the requirements of increased activities in the Navy and Marine Corps. His profound understanding and meticulous care in handling the problems of procurement and the training of medical officers, dental officers, nurses and enlisted hospital corpsmen were a distinct asset in the effective functioning of the bureau. His outstanding service in the successful fulfilment of this exacting assignment reflects the highest credit on Rear Admiral Sheldon and the United States Naval Service." Dr. Sheldon graduated from the University of Michigan Medical School, Ann Arbor, in 1909 and entered the service Feb. 1, 1911.

Captain Robert Faust

A Letter of Commendation was recently presented to Capt. Robert Faust, Wichita, Kan., "for meritorious service in the performance of his duties in the medical section, Logistics Division, on the Staff of the Commander in Chief, United States Pacific Fleet and Pacific Ocean Areas, from Jan. 17 to Sept. 1, 1945. Captain Faust displayed outstanding professional ability, sound judgment and initiative in the preparation of plans for the care and treatment of the sick and wounded, implementation of improved technics in evacuation and treatment of casualties, preparation of medical sections of operations plans and plans for and staff supervision over medical installations in connection with the development and roll up of bases. His conduct and devotion to duty were at all times in keeping with the highest traditions of the United States Naval Service." Dr. Faust graduated from the University of Kansas School of Medicine, Kansas City, in 1928 and entered the service June 28, 1928.

Captain Guy Fish

The Bronze Star was recently presented to Capt. Guy Fish, Indian Lake, N. Y. The citation accompanying the award read "For meritorious service in connection with operations against the enemy as medical officer on the staff, Commander Aircraft Central Pacific Force, Commander Forward Area Central Pacific and Commander Marianas from Jan. 20, 1944 to Sept. 22, 1945. During this period he was in a large measure responsible for the establishment, development and administration of medical facilities in the Marshall, Marianas, Western Caroline and Volcano islands. In addition, he assisted in supervising the evacuation of the wounded by aircraft and surface vessels during military operations of great importance. By his zeal, cheerfulness and outstanding professional and administrative ability he contributed materially to the success of the Central Pacific campaign. His complete devotion to duty and conduct throughout were in keeping with the highest traditions of the United States Naval Service." Dr. Fish graduated from Albany (N. Y.) Medical College in 1915 and entered the service Jan. 1, 1921.

U. S. PUBLIC HEALTH SERVICE

MEDICAL OFFICERS RELEASED OR RECOMMENDED FOR RELEASE SINCE V-J DAY

Aldrich, Napier S., Surgeon (R)
Allin, Jack G., Senior Assistant Surgeon (R)
Altland, John K., Senior Assistant Surgeon (R)
Altman, Harrie P., Senior Assistant Surgeon (R)
Apshaga, Bronie, Assistant Surgeon (R)
Armour, Paul S., Surgeon (R)
Arnett, Samuel C., Jr., Senior Assistant Surgeon (R)
Aronson, Jesse, Surgeon (R)
Askew, Julius B., Surgeon (R)
Babbitt, Clifford H., Senior Assistant Surgeon (R)
Bachman, Landon H., Senior Assistant Surgeon (R)
Ballard, Francis E. C., Senior Assistant Surgeon (R)
Barksdale, John H., Jr., Assistant Surgeon (R)
Barrett, Daniel C., Surgeon (R)
Beaton, Joseph G., Senior Assistant Surgeon (R)
Bellamy, William A., Surgeon (R)
Benning, Charles H., Surgeon (R)
Bernstein, Leo, Surgeon (R)
Bevacqua, William A., Surgeon (R)
Biggy, Robert F., Senior Assistant Surgeon (R)
Bikales, Victor W., Senior Assistant Surgeon (R)
Bobrow, Aaron, Surgeon (R)
Boltizar, Martin, Assistant Surgeon (R)
Botvinick, Isadore, Surgeon (R)
Bourg, Donald J., Senior Assistant Surgeon (R)
Bourke, John J., Senior Surgeon (R)
Bown, William C., Senior Assistant Surgeon (R)
Branscomb, Louise, Surgeon (R)
Brockman, George F., Surgeon (R)
Brooks, Glidden L., Senior Assistant Surgeon (R)
Brown, Chester P., Senior Surgeon (R)
Brown, Frank, Surgeon (R)
Brown, Henry A., Surgeon (R)
Bryan, Burton D., Senior Assistant Surgeon (R)
Buell, James, Senior Assistant Surgeon (R)
Buell, John H., Senior Assistant Surgeon (R)
Buerger, Walter R., Senior Assistant Surgeon (R)
Butterfield, Walter L., Jr., Senior Assistant Surgeon (R)
Cameron, Albert R., Surgeon (R)
Carpineto, Arthur S., Surgeon (R)
Casper, Wolfgang, Surgeon (R)
Caygill, Wayne, Senior Assistant Surgeon (R)
Chapman, Wallace, Surgeon (R)
Chernoff, Benjamin, Senior Assistant Surgeon (R)
Cherry, Robert L., Senior Surgeon (R)
Clemmons, Lowell H., Senior Assistant Surgeon (R)
Clough, William, Senior Assistant Surgeon (R)
Cook, Martin J., Senior Assistant Surgeon (R)
Costrino, Joseph A., Senior Assistant Surgeon (R)
Coughlin, Paul J., Senior Assistant Surgeon (R)
Crawford, William, Surgeon (R)
Cushman, Harry R., Surgeon (R)
Cutler, Herman S., Senior Assistant Surgeon (R)
Cutter, Edward P., Senior Assistant Surgeon (R)
D'Alecy, Louis A., Senior Assistant Surgeon (R)
Davis, James G., Assistant Surgeon (R)
Davis, Jerome G., Senior Assistant Surgeon (R)
Dennis, Melvin S., Senior Assistant Surgeon (R)
Devlin, Joseph, Senior Surgeon (R)
Devlin, Joseph T., Senior Assistant Surgeon (R)
DiMaio, Dominick J., Senior Assistant Surgeon (R)
Dobos, Emeric I., Medical Director (R)
Donath, Douglas, Surgeon (R)
Donnelly, Kenneth, Surgeon (R)
Doran, Ralph J., Surgeon (R)
Doyle, Olline B., Surgeon (R)
Drake, Ellet H., Senior Assistant Surgeon (R)
Duncan, Everett T., Surgeon (R)
Dunham, Ruth E., Senior Assistant Surgeon (R)
Dusenberry, Charles, Senior Assistant Surgeon (R)
Duston, Charles H., Senior Assistant Surgeon (R)
Dykstra, Donald, Surgeon (R)
Edlich, Theodore, Surgeon (R)
Ehrman, Frederick C., Senior Assistant Surgeon (R)
Elkind, Maurice, Surgeon (R)
Elliott, John, Senior Assistant Surgeon (R)
Emge, Ludwig A., Medical Director (R)
Enns, Eugene, Senior Assistant Surgeon (R)
Eslick, Ralph L., Senior Assistant Surgeon (R)
Eyssen, Robert E., Senior Assistant Surgeon (R)
Fagin, I. Donald, Senior Assistant Surgeon (R)
Fagman, Emanuel B., Senior Assistant Surgeon (R)
Farber, David N., Senior Assistant Surgeon (R)
Farner, Lloyd N., Surgeon (R)
Fidler, William, Senior Assistant Surgeon (R)
Fiore, Charles N., Senior Assistant Surgeon (R)
Fishbach, Robert H., Senior Assistant Surgeon (R)
Fisher, Samuel, Surgeon (R)
Flebbe, Richard, Senior Assistant Surgeon (R)
Fluke, Charles W., Senior Assistant Surgeon (R)
Foraker, Alvan G., Surgeon (R)
Forcione, Eugene A., Senior Assistant Surgeon (R)
Fouts, John D., Senior Assistant Surgeon (R)
Fowler, Hudson D., Jr., Senior Assistant Surgeon (R)
Franzblau, Abraham N., Surgeon (R)
Freeman, Robert, Senior Assistant Surgeon (R)
Frich, Michael G., Senior Assistant Surgeon (R)
Furlong, Robert D., Senior Assistant Surgeon (R)
Gammette, Evan G., Senior Assistant Surgeon (R)
Gant, James, Surgeon (R)
Gardner, James L., Senior Assistant Surgeon (R)
Gardner, Milton M., Senior Assistant Surgeon (R)
Garvin, O. David, Surgeon (R)
Gass, Royden, Senior Surgeon (R)
Gersten, Samuel, Senior Assistant Surgeon (R)
Glasscock, Ernest L., Surgeon (R)
Golino, Emanuel F., Senior Assistant Surgeon (R)
Goodhart, Robert S., Surgeon (R)
Googe, James T., Surgeon (R)
Gorrell, Ralph L., Senior Assistant Surgeon (R)
Grandmont, Irene, Senior Assistant Surgeon (R)
Graydon, Edward L., Senior Surgeon (R)
Greenblatt, Robert B., Senior Surgeon (R)
Grubin, Charles J., Senior Assistant Surgeon (R)
Hackett, Daniel C., Surgeon (R)
Hadden, Merle R., Senior Assistant Surgeon (R)
Halpern, Lawrence K., Surgeon (R)
Halter, Paul, Senior Assistant Surgeon (R)
Harvey, Oscar, Senior Assistant Surgeon (R)
Hayden, Charles G., Senior Assistant Surgeon (R)
Hayes, Frederick J., Senior Assistant Surgeon (R)
Hays, George A., Senior Surgeon (R)
Hebble, Joseph N., Surgeon (R)
Heilman, Robert, Senior Assistant Surgeon (R)
Held, David H., Surgeon (R)
Hermann, Walter L., Senior Assistant Surgeon (R)
Hershey, Thomas S., Senior Assistant Surgeon (R)
Hetreed, Francis H., Surgeon (R)
Hite, Jacob W., Senior Assistant Surgeon (R)
Hoff, Henry B., Senior Surgeon (R)
Holley, Howard L., Senior Assistant Surgeon (R)
Hollinshead, Joseph B., Surgeon (R)
Hunter, Forect C., Surgeon (R)
Hunter, James A., Jr., Senior Assistant Surgeon (R)
Hurwitz, Samuel, Senior Assistant Surgeon (R)
Jacoby, George W., Jr., Senior Assistant Surgeon (R)
James, Robert E., Senior Assistant Surgeon (R)
James, Thomas, Senior Assistant Surgeon (R)
January, Derick A., Surgeon (R)
Jeffries, Benjamin, Senior Assistant Surgeon (R)
Jewell, George M., Senior Assistant Surgeon (R)
Johnson, Carl, Senior Assistant Surgeon (R)
Kaack, Harry F., Jr., Assistant Surgeon (R)
Karp, David, Senior Assistant Surgeon (R)
Keefe, Edward, Senior Assistant Surgeon (R)
Keller, William S., Senior Surgeon (R)
Kelly, John F., Senior Assistant Surgeon (R)
Kelly, Timothy H., Surgeon (R)
Kendall, E. Worley, Surgeon (R)
Kernish, Alexander I., Surgeon (R)
Kersker, Peter B., Senior Assistant Surgeon (R)
Kile, Roy, Surgeon (R)
King, Everett A., Surgeon (R)
Kintner, Merlin Q., Senior Assistant Surgeon (R)
Kirsten, Erwin L., Surgeon (R)
Kiser, Glenn, Senior Assistant Surgeon (R)
Klein, Jack, Senior Assistant Surgeon (R)
Knupp, Wilber S., Senior Assistant Surgeon (R)
Konys, Harry C., Surgeon (R)
Korey, Saul, Senior Assistant Surgeon (R)
Kuehn, Carl, Senior Assistant Surgeon (R)
Kupper, Herbert, Senior Assistant Surgeon (R)
Kurtz, Frederick H., Senior Assistant Surgeon (R)
Lachman, Joseph, Senior Assistant Surgeon (R)

U. S. PUBLIC HEALTH SERVICE

MEDICAL OFFICERS RELEASED OR RECOMMENDED FOR RELEASE SINCE V-J DAY

Lally, Timothy F., Senior Assistant Surgeon (R)
Langer, Sydney, Assistant Surgeon (R)
Langs, Elias W., Senior Assistant Surgeon (R)
Leavell, Hugh R., Senior Surgeon (R)
Lehr, Eric, Senior Assistant Surgeon (R)
Lemmerz, Willard H., Senior Assistant Surgeon (R)
Levin, Stanley S., Assistant Surgeon (R)
Levine, Solon J., Surgeon (R)
Lewis, John, Senior Assistant Surgeon (R)
Lich, Robert, Jr., Surgeon (R)
Lieberman, Hyman, Surgeon (R)
Light, Irving, Senior Assistant Surgeon (R)
Light, Wilbur B., Surgeon (R)
Lindquist, Paul A., Surgeon (R)
Lipton, Harry R., Surgeon (R)
Lister, George, Senior Assistant Surgeon (R)
Little, James W., Senior Assistant Surgeon (R)
Loebel, Arthur L., Assistant Surgeon (R)
Lowe, Charles R., Senior Assistant Surgeon (R)
McAuliffe, George F., Surgeon (R)
McCauley, George, Surgeon (R)
McMillen, Charles H., Jr., Surgeon (R)
Makover, Henry B., Senior Surgeon (R)
Mark, Bernard J., Senior Assistant Surgeon (R)
Marks, Harold, Surgeon (R)
Martin, Ivan E., Senior Assistant Surgeon (R)
Melton, Frank M., Senior Assistant Surgeon (R)
Messman, Harry, Surgeon (R)
Metcoff, Jack, Senior Assistant Surgeon (R)
Miglets, Andrew W., Senior Assistant Surgeon (R)
Millen, Morris H., Surgeon (R)
Miller, John W., Surgeon (R)
Milstein, David, Surgeon (R)
Monaco, Angelo R., Senior Assistant Surgeon (R)
Morgan, Thomas E., Surgeon (R)
Morris, William A., Senior Assistant Surgeon (R)
Moynihan, Arthur, Surgeon (R)
Munter, Edgar J., Surgeon (R)
Murphy, Thomas F., Surgeon (R)
Nagler, Herman J., Surgeon (R)
Needles, John W., Senior Assistant Surgeon (R)
Nesson, Willard I., Senior Assistant Surgeon (R)
Nevins, Robert, Surgeon (R)
Nichamin, Samuel J., Surgeon (R)
Nierman, M. Murray, Assistant Surgeon (R)
Norton, Russell C., Senior Assistant Surgeon (R)
Notkin, Herbert, Senior Assistant Surgeon (R)
O'Brien, James A., Surgeon (R)
Olean, Julius A., Surgeon (R)
Oliver, Robert K., Senior Assistant Surgeon (R)
Oliver, Ward L., Surgeon (R)
Oshlag, Julius A., Surgeon (R)
Ostrowski, Sigismund J., Surgeon (R)
Palmer, James L., Senior Assistant Surgeon (R)
Pariser, Harry, Surgeon (R)
Patrick, Fred E., Assistant Surgeon (R)
Peck, Harris, Senior Assistant Surgeon (R)
Pendola, Joseph J., Senior Assistant Surgeon (R)
Perkins, James E., Senior Surgeon (R)
Petrich, John M., Senior Assistant Surgeon (R)
Philips, Harry C., Surgeon (R)
Pichette, Charles E., Jr., Senior Assistant Surgeon (R)
Pickett, William H., Surgeon (R)
Podolnick, Nelson, Senior Assistant Surgeon (R)
Pogue, Jackson, Senior Assistant Surgeon (R)
Poliakoff, Harvey, Surgeon (R)
Powdermaker, Florence, Surgeon (R)
Powell, Algerd, Surgeon (R)
Prince, Leon N., Surgeon (R)
Prince, Paul, Senior Assistant Surgeon (R)
Rademacher, Everett, Surgeon (R)
Rawson, Arnold, Senior Assistant Surgeon (R)
Raymond, Bernard H., Senior Assistant Surgeon (R)
Reese, Harold J., Senior Assistant Surgeon (R)
Reilly, Walter J., Surgeon (R)
Reiter, Adolph F., Surgeon (R)
Ricca, Renato A., Assistant Surgeon (R)
Riccardi, Peter, Surgeon (R)
Riley, Joseph G., Senior Assistant Surgeon (R)
Ritter, Wayne, Surgeon (R)
Robbins, Robert M., Surgeon (R)
Root, Ralph N., Surgeon (R)
Rosenberg, David N., Assistant Surgeon (R)
Ross, Milton S., Senior Assistant Surgeon (R)
Rothermel, Robert E., Surgeon (R)
Ruch, Ralph, Surgeon (R)
Ryan, Nelson W., Surgeon (R)
Ryan, V. Gerard, Surgeon (R)
Sackren, Harry, Surgeon (R)
Saidel, Joseph W., Assistant Surgeon (R)
Samson, Ralph, Surgeon (R)
Sanker, John F., Senior Assistant Surgeon (R)
Santiago-Stevenson, Dwight, Senior Assistant Surgeon (R)
Sao Paulo, Silvio de, Senior Assistant Surgeon (R)
Sappington, Emmett E., Senior Surgeon (R)
Scagnelli, Dominick, Senior Assistant Surgeon (R)
Scarlett, William P., Surgeon (R)
Schaffer, Frank J., Assistant Surgeon (R)
Schumacher, James, Senior Assistant Surgeon (R)
Scott, Edgar M., Jr., Senior Assistant Surgeon (R)
Scoville, Dorothea H., Surgeon (R)
Seaman, Charles L., Surgeon (R)
Sharp, Clarence M., Surgeon (R)
Sherman, Jerome, Senior Assistant Surgeon (R)
Sherman, Stephen H., Senior Assistant Surgeon (R)
Shiffer, Maynard, Senior Assistant Surgeon (R)
Shiling, Moses S., Surgeon (R)
Shrop, Theodore R., Senior Assistant Surgeon (R)
Siegal, Marvin, Senior Assistant Surgeon (R)
Signer, Arthur C., Assistant Surgeon (R)
Silver, Archie A., Senior Assistant Surgeon (R)
Smith, Courtney M., Senior Surgeon (R)
Smith, Earl, Senior Assistant Surgeon (R)
Smith, Turner B., Senior Assistant Surgeon (R)
Sokolov, Raymond, Senior Assistant Surgeon (R)
Sondag, Roger F., Surgeon (R)
Sorensen, Raymond, Senior Assistant Surgeon (R)
Southworth, Hamilton, Senior Surgeon (R)
Spielholz, Jess B., Senior Assistant Surgeon (R)
Steiner, David L., Surgeon (R)
Stepita, Cornelius T., Surgeon (R)
Stokes, Lowell, Surgeon (R)
Sugg, Eugene S., Senior Assistant Surgeon (R)
Sunners, Elizabeth, Surgeon (R)
Tabershaw, Irving R., Surgeon (R)
Tauber, Hans, Assistant Surgeon (R)
Taylor, S. Harvey, Senior Surgeon (R)
Taylor, John O., Surgeon (R)
Tench, William R., Surgeon (R)
Teplick, J. George, Surgeon (R)
Thomas, Ruth Boring, Surgeon (R)
Thomson, John W., Senior Assistant Surgeon (R)
Thomson, Karl J., Surgeon (R)
Todd, William, Senior Assistant Surgeon (R)
Tomlinson, Robert W., Assistant Surgeon (R)
Tramontana, Michael, Senior Assistant Surgeon (R)
Tudor, Charles, Surgeon (R)
Twaddle, Paul H., Surgeon (R)
Tyner, Harlan H., Senior Assistant Surgeon (R)
Ury, George A., Senior Assistant Surgeon (R)
Vaccaro, Michael, Senior Assistant Surgeon (R)
Van Camp, Wesley, Senior Assistant Surgeon (R)
Walcott, William H., Surgeon (R)
Walsh, Joseph A., Senior Assistant Surgeon (R)
Weber, George F., Surgeon (R)
Weber, George W., Surgeon (R)
Weiss, Joseph G., Surgeon (R)
Weissman, I. Oscar, Surgeon (R)
Welfeld, Alvan A., Senior Assistant Surgeon (R)
Wetterstroem, Robert, Senior Assistant Surgeon (R)
Weyand, George M., Jr., Senior Assistant Surgeon (R)
White, Merritt, Surgeon (R)
Wiesel, Carl, Senior Assistant Surgeon (R)
Wilkins, Walter, Senior Surgeon (R)
Williams, Richard D., Assistant Surgeon (R)
Wilson, Russell H., Surgeon (R)
Winstead, George A., Senior Assistant Surgeon (R)
Wolf, Glenn C., Senior Assistant Surgeon (R)
Wood, Harold, Surgeon (R)
Woods, Ozro T., Senior Surgeon (R)
Woofter, Andrew C., Surgeon (R)
Worrell, James, Senior Assistant Surgeon (R)
Wyle, Irving, Surgeon (R)
Yared, Jerome A., Senior Assistant Surgeon (R)
Young, Raymond L., Senior Assistant Surgeon (R)
Zimmerman, Kent A., Senior Assistant Surgeon (R)
Zink, William L., Senior Assistant Surgeon (R)

MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

Alabama

Benkwith, Karl B............Montgomery
Hawley, George M. B. II...Birmingham
Holladay, Joel Jr................Gadsden
Kiely, William F.............Birmingham
McCarn, Oscar C. Jr...........Warrior
McGinty Arthur P..........Birmingham
Mason, Robert J.............Birmingham
Wittmeier, James L.............Oneonta

Arizona

Kimball, Robert M.................Yuma
Kober, Leslie R.................Phoenix
Palmer, Paul V..................Phoenix

Arkansas

Barnett, James C..........Heber Springs
Dalton, Perry J..................Camden
Harper, John W...............El Dorado
Lewis, James F...............Fayateville

California

Allen, Ralph W........Huntington Park
Bailly, Thomas E. Jr......San Francisco
Bain, Clarence L.................Oakland
Barritt, John L.................La Jolla
Beach, Edward W............Sacramento
Beine, William R..................Selma
Bischoff, Harold W ....San Francisco
Blatter, Robert K...........Los Angeles
Blosser, John A..................Oakland
Bogen, Emil..................Olive View
Bonar, Leland W..........San Francisco
Borley, Roswell D.......*Half Moon Bay*
Boscoe, Anthony R..........Sacramento
Bryant, Benjamin L........Santa Monica
Bullis, John A. E..........Los Angeles
Burnham, DeWitt K.......San Francisco
Card, John F..............San Francisco
Carson, James G....... ..San Francisco
Cohn, Samuel.............San Francisco
Cook, Enos P..................San Jose
Daniels, Albert C....................Ross
Davison, Claude L..........Los Angeles
Dean, John V. B...........Santa Monica
Dickey, Clarence D.........Los Angeles
Director, William...........Los Angeles
Dueker, Howard W.........Los Angeles
Ebers, Theodore M..........Los Angeles
Fox, Ernest T.................Pasadena
Gibbons, Henry III.......San Francisco
Gobbell, Willard M....North Hollywood
Haight, Warne L..............Coronado
Hallstone, Victor E.............Southgate
Hunt, Frederick T..........Los Angeles
Impey, Charles C..........San Francisco
Joseph, Louis...............Los Angeles
Kraushaar, Isaac N............La Habra
Lane, Robert D..................San Jose
Larkin, John C..................Berkeley
Lebo, Charles A. P........Redwood City
Lee, Adrian L...............Los Angeles
Ludwig, Joseph L...........Los Angeles
McBride, June P............Los Angeles
McDermott, John C.........Los Angeles
Mantle, Verne M...........Los Angeles
Metildi, Pasquale F...............Upland
Miano, Benedict D. A....San Bernardino
Miller, Doris L....................Vallejo
Mitchell, John A..................Oakland
Moeller, Ernst R............Los Angeles
Olrich, Frank M...................Oakland
Pedersen, Lars A..................Berkeley
Pyle, Ross C.....................San Diego
Raker, John W...............San Francisco
Rosove, Leon................Santa Monica
Schmoele, John M..........Beverly Hills
Smith, Harry F..................San Bruno
Smith, Merle A..................Inglewood
Smith, Roy D...................San Pedro

California—Continued

Sunseri, James..................San Jose
Thompson, Arthur R...........Berkeley
Walker, Joe E.............Long Beach
Ware, James G..... .....Santa Barbara
Watkins, Robert P........San Francisco
Watt, Richard H............Los Angeles
Wessels, Arthur L...............Salinas
Whitsett, John W...........Los Angeles
Wieman, Walter H..........Los Angeles
Wilbur, Dwight L.........San Francisco
Williams, Alvin B..............San Jose
Williams, Robert N.............*Ontario*
Wood, Dennistoun Jr..........Palo Alto

Colorado

Brady, Emory J........Colorado Springs
Donnelly, James E.............Trinidad
Newman, Samuel P..............Denver
Tupper, Harvey M.......Grand Junction
Weber, Clayton C..............La Junta

Connecticut

Allen, George F..........West Hartford
Conlon, William L...........Manchester
Davol, Rector T..............Greenwich
Deming, Archibald S.....West Hartford
Eddy, Maxon H................Fairfield
Garcin, Cecil R...............Danielson
Louderbough, Henry..........Waterbury
Martin, John E. Jr.............Norwich
Rawls, Edward C................Darien
Scully, Roger T.............New Britain
Standish, Welles A.......West Hartford
Winters, John T.........West Hartford

Delaware

Briggs, Ward W............Wilmington

District of Columbia

Connelly, Jehue R..........Washington
Feldman, Irvin..............Washington
Ferree, John W..............Washington
Fulcher, Oscar H ....Washington
Gard, Perry W..............Washington
Gary, Edward T.............Washington
Kelley, Paul J...............Washington
Knowlton, Don S............Washington
Ryland, Charles P...........Washington
Silverman, Carl.............Washington
Williams, Jonathan M........Washington

Florida

Bond, Benjamin J.....N. Winter Haven
Clements, Merritt R..........Tallahassee
Ekermeyer, Ernest W........Tallahassee
Garrard, Hollis F................Miami
Hutson, Thomas W................Miami
Marr, Norval M..........St. Petersburg
Oberdorfer, Aaron Z.........Jacksonville
Simmons, Eugene D.........Jacksonville
Stoddard, Spotswood D......Fort Pierce
Totty, Edward A...........*Coral Gables*

Georgia

Anderson, Egbert V.............Atlanta
Burgess, Taylor S................Atlanta
Coleman, Hubert W...........Savannah
Goodwin, Thomas W............Augusta
Hamm, William G.......... .....Atlanta
Holloway, George A..............Atlanta
Mitchell, William E.... ....Atlanta
Parker, Thomas L.... . ...Atlanta
Terry, Daniel B........ .. .Homerville
Walter, Robert D. ....Calhoun

Idaho

Kackley, Evan M..........Soda Springs
Peterson, Willard M.........Twin Falls

Illinois

Abt, Arthur F.....................Chicago
Ahroon, Carl R. Jr..........Bloomington
Andelson, Mayo M................Chicago
Berger, Louis......................Chicago
Bernstein, Arthur..................Chicago
Brennan, John F..................Chicago
Brodt, Leonard P..................Chicago
Browne, Freeman H...............Chicago
Chapman, Morey...................Chicago
Czwalinski, Peter F...............Chicago
Davis, Jack R......................Chicago
Durburg, John R...................Chicago
Falstein, Eugene I.................Chicago
Jensen, Johannes M. L...........Chicago
Kruse, George F...................Chicago
Kweder, David J................Waukegan
McGuire, Philip R..................Chicago
McIntosh, James R..........Bloomington
Malloy, Francis D.................Chicago
Mandernack, L. E..................Chicago
Maxwell, Sam B..................Flossmoor
May, Edwin R.......................Chester
Mladick, Edward A...............Bellwood
Moberley, Paul B..................Chicago
Morris, Judson B............Calumet City
Mrazek, Charles...................Chicago
Mueller, George R.................Chicago
O'Connell, Morgan J...............Chicago
Rideout, William E...............Freeport
Roberson, Brooks L..........Wood River
Roberts, George A.................Chicago
Schultz, Adam S...........Melrose Park
Snyder, Morris M..................Chicago
Steiner, Matthew M...............Chicago
Taylor, John B..................Carbondale
Topcik, Aaron A.................Waukegan
Trumpe, Darrell H..............Springfield
Udesky, Isadore C.................Chicago
Verneuil, Julius J...............Collinsville
Wagner, Ben E..................Riverside
Waldo, Proctor C.............Oak Park
West, Robert H...................Evanston
Whitaker, Walter M................Quincy
Wilson, Fi
Wippern,

Indiana

Hammond, Stan
Herbst, Robert
Holland, Phillip
Kinneman, Robert E..........[illegible]
Row, Dunn H.................Indianapolis
Sovine, Joe W...............Indianapolis
Williams, Aubrey H..........Fort Wayne
Williams, Francis M. Jr.......Pendleton

Iowa

Bird, Raymond G...................Clarion
Glasscock, Thomas C..........Hawarden
Glesne, Otto N...............Fort Dodge
Hansen, Fred A...................Red Oak
Lage, Raleigh H...................Earlville
McFarland, Guy E. Jr...............Ames
Randall, William L...............Hampton
Rieniets, John H............Cedar Rapids
Rose, Joseph E...........Grundy Center
Wolfe, Russell M..........Marshalltown

Kansas

Clark, Porter M............Independence
Eckles, Lucius E....................Topeka
Haus, Loren W....................*Turner*
Orr, Richard E................Hutchinson
Price, Vaughan C..............McPherson
Rich, William T..................Neodesha
Ward, Delbert A...........Arkansas City

Kentucky

Coldiron, John C...................Hazard
Maxson, William T.............Lexington
Worthington, Wm N..............Ashland

MEDICAL OFFICERS RELEASED BY THE NAVY

Louisiana

Bennett, William H.............Metairie
Coffel, Melvin H.............Shreveport
Culpepper, Walter S........New Orleans
Hanley, Patrick H.........New Orleans
Kelly, Edward F...........New Orleans
Lyons, Shirley C...........New Orleans
Robins, Irvine A...........Baton Rouge

Maine

Almond, Henry................Portland
Caswell, John A..................Belfast
Guy, John T................South Eliot
Ives, Howard R..................Portland
Jackson, Norman M............Rumford
Jones, Paul A.......................Union

Maryland

Bruenn, Howard G............Rockville
Dorman, John W. Jr..........Baltimore
Hunter, James S. Jr...........Frostburg
Kemp, Simon I..................Peksville
Lehman, William L............Bethesda
McLaughlin, Donald C.........Baltimore
Martin, James R..............Annapolis
Miller, William S..............Baltimore
Moulton, Olin C..................Salisbury
Queen, Greenville B.......Takoma Park
Tucker, Walter I..................Pikesville
Wells, Gibson J..................Baltimore
Whitaker, Charles S..........Clarksville
Williams, Richard T.............Laurel
Zeligman, Israel...............Baltimore

Massachusetts

Atkinson, Gordon D.............Malden
Baker, Robert H.................Worcester
Barker, Robert H...............Brookline
Berman, Marcus W............Roslindale
Boyd, Kenneth T...............Haverhill
Burke, John A................Hyde Park
Burrage, Walter S..............Brookline
Caradonna, Henry............Worcester
Carey, Edmund L.................Quincy
Carpenter, Frederick J..........Pittsfield
Clapp, William B.........North Grafton
Collins, John F..................Winthrop
Compson, James E...............Boston
Conway, Christopher C..........Milton
Devlin, Thomas P..............Stoneham
Dinan, Thomas E...........Framingham
Dixey, Grant M.......................Salem
Dodge, Donald T...............Arlington
Dwight, Richard W............Brookline
Dynes, John B......................Boston
Elder, Burton F...................Hingham
Finn, Herbert G...................Lynnfield
Franz, Adolph Jr..................Holyoke
Gates, Donald C..................Boston
Gowen, Willis M..................Melrose
Kennedy, James M. Jr..........Pittsfield
King, Charles V.................Worcester
Lent, James W..............Newton Center
Lilyestrom, Sanfrey M.........Worcester
McCarty, Raymond A..........Waltham
Magnette, Jules Jr.............Cambridge
Murphy, Lawrence J.................Milton
Norcross, John W....................Milton
Norton, Hermon....................Waban
O'Brien, Joseph V.............Dorchester
Regan, James J....................Boston
Reed, John F......................Rockport
Rudd, Jacob L..................Cambridge
Russo, Anthony R.............Somerville
Sise, Herbert S..................Brookline
Smith, Jacob.......................Medford
Stratton, Charles W. Jr...............Lee
Toombs, Herbert R.............Westfield
Webster, Earle H............Bridgewater
White, James C......................Boston
Williams, Walter W..........Springfield

Michigan

Bergo, Howard L................Detroit
Bovill, Edwin G...........Grosse Pointe
Gass, Herman H.................Ann Arbor
Gezon, Horace M..........Grand Rapids
Miller, Maurice J.....................Auburn
Nickels, Mervyn M........Traverse City
Norconk, Alonzo A..............Detroit
Robson, Edmund J.........East Lansing
Savignac, Eugene M...........Dearborn
Scarney, Herman D..............Detroit
Shanoski, Stanley J..............Detroit
Shapiro, Reuben I.................Detroit
Shellman, Millard W.......Grand Rapids
Smith, John A......................Detroit
Stadle, Wendell H..........Battle Creek
Stevens, Charles H...............Detroit
Stiles, Frank Jr............East Lansing
Westcott, Royal J.................Baraga
Yott, William J......................Detroit

Minnesota

Anderson, John T............Montevideo
Arling, Philip A...........Chicago City
Ballou, Hosea C...............Rochester
Bakkila, Henry E.................Duluth
Boynton, Bruce...................Duluth
Colp, Edward A.............Robbinsdale
Craig, Winchell M..............Rochester
Doyle, Leo W. Jr...............Rochester
Holzapfel, Frederick C.......Minneapolis
Jolin, Raymond V.........Grand Rapids
Kingston, James R.............Coleraine
Knutson, George O...........Greenbush
Kraemer, George N..........Minneapolis
Lane, Robert E....................St. Paul
Larsen, Frank W.............Minneapolis
Marvin, Charles P...............St. Paul
Morrison, William F.........Minneapolis
Olsen, Ralph L....................St. Paul
Virnig, Mark P........................Wells

Mississippi

Butler, Frank L. Jr.............McComb
Robinson, Burton L............Meridian
Townsend, George G............Morton

Missouri

Bailey, Sidney M.................Malden
Bromberg, Leon................St. Louis
Biggs, Fred J. Jr..............Neelyville
Craig, Irwin T......................Joplin
Davis, George W. Jr........Kansas City
Danglade, James H.........Kansas City
Harsh, Ralph T.................St. Louis
Howard, John C. Jr.........Kansas City
Jost, Charles A..................St. Louis
Kent, Edward M.................St. Louis
Klein, Andrew G.................St. Louis
McClanahan, Robert C.......Kansas City
Saunders, George M...........St. Louis
Stauffer, Maurice H.........Kansas City

Montana

Knierim, Frederick M...........Glasgow
Walker, Robert E............Livingstone

Nebraska

Burdick, Donald E...........David City
Graham, Joseph E................Omaha
McGrath, William M.......Grand Island
Peterson, John C.................Lincoln
Peterson, Paul L............Broken Bow
Taylor, Willis H. Jr.............Omaha
Vroman, Donald C...............Omaha
Wiley, Clare C...................Imperial

Nevada

Harper, Twyman C. ....Reno
Valenta, Henry J....................Reno

New Hampshire

Chamberlin, Eugene F..........Hillsboro
Messinger, Herbert B...........Franklin

New Jersey

Allen, James M.................Passaic
Armour, William S............Madison
Barnett, Robert W...............Newark
Bayer, Harold J............Atlantic City
Becker, George L...............Paterson
Becker, Marvin C................Newark
Behr, Irving S..............Weehawken
Bew, Richard C...............Brigantine
Blake, Dexter B...............Montclair
Booth, Walter S...............Elizabeth
Bornemann, Carl..............Montclair
Borshaw, Hyman............Jersey City
Boyer, Paul K...................Summitt
Bruning, Richard H..........Maplewood
Buchanan, Ralph M. L......Phillipsburg
Burkett, John P...............Woodbury
Caggiano, Anthony P..........Montclair
Carroll, Thomas R........Cliffside Park
Cassell, Arnold..................Bayonne
Chapman, Walter I. Jr.........Bayonne
Charleroy, Durant K.........Bordentown
Citret, Coleman..................Newark
Clark, Paul M..............Long Branch
Clement, John B...................Beverly
Clinton, Joseph A................Newark
Conserva, Peter V..................Clifton
Cook, Homer E..............Somerville
Davidson, Eric W..................Verona
Davison, Charles S.................Salem
Dawson, Harry..................Paterson
Delafrange, Kenneth M..........Vineland
Dempsey, John H.....................Berlin
DePalma, Anthony F.............Orange
Donnelly, William A.......Atlantic City
Dunn, Theodore B............Bloomfield
Durham, Robert B..............Ventnor
Evans, John R. Jr.........South Orange
Fitch, Thomas S. P............Plainfield
Gallo, James S..................Paterson
Gorenberg, Harold...........Jersey City
Green, Martin.................Princeton
Grenhart, George W......Merchantville
Hauptman, Harry...........Jersey City
Heaton, Stuart C..............Elizabeth
Hennig, George C............Englewood
Henry, Walter J.................Hoboken
Hesseltine, Clare E.............Freehold
Hiler, Stuart A.................Rockaway
Hughes, James W. Jr.......Atlantic City
Humbert, Joseph C.........Stewartsville
Hutner, Cyril I.............Woodbridge
Imbleau, Joseph E. L.............Union
Johnson, Winton H.............Andover
Kennedy, Andrew A............Paterson
Kessler, Henry H................Newark
Koeck, George P.................Newark
Laauwe, Harold W............Paterson
Lang, Richard E..........South Amboy
Landesman, William..............Kearny
Lazow, Sollon M..............Mattawan
McCarthy, George L...........Paterson
McCroskery, Hamilton W...East Orange
Maclaren, Philip J............Westwood
Marlett, Neumann C..........Belvidere
Maroney, James H...............Summitt
Martin, Franklin Jr...............S. Orange
Marts, George H..............Plainfield
Mechanik, Harvey K..........Plainsfield
Meyers, Francis R...............Paterson
Mohair, John P.....................Dover
Moister, Frank C................Summitt
O'Grady, Michael J..............Millburn
Perrine, Cornelius C...........Fair Haven
Peters, Richard C.............Plainfield
Pizzi, Francis W..................Orange
Polow, Benjamin..........West Orange
Rubenstein, Robert..........Jersey City
Ruocco, William B............Paterson
Schwarzfeld, Howard K.........Newark
Sexton, Edward V..............Tenneck
Sickel, Emanuel M............Lakewood
Sullivan, William T............Belleville
Taranto, Michael..................Linden

MEDICAL OFFICERS RELEASED BY THE NAVY

New Jersey—Continued

Tollefson, George A..............Bronx
Van Winkle, Charles I.......Rutherford
Volpe, Donald J...........Hammontown
Wesson, Harrison R....Upper Montclair
West, David H............Collingwood
Wikler, Louis A...............Margate
Wilson, John H. Jr.........West Orange
Zacchino, Arnold A.............Palisade
Wyman, Edward H...........Burlington

New York

Allen, Edward R..............Cortland
Avallone, Louis A..............Lowville
Babbage, Edwin D..............Buffalo
Backus, Leslie H............Gloversville
Barbieri, Vito Jr....Hastings-on-Hudson
Barnes, Frank E., Jr............Auburn
Barnett, James C.......Rockaway, L. I.
Barone, George H............Lockport
Barrett, James V.................Troy
Bartholomew, Herbert A.....Glens Falls
Bates, Edgar H............New York
Beard, James R. Jr...........New York
Bell, Edward G. Jr...........Bronxville
Berry, Reginald V...............Bangall
Bessie, Everett M............New York
Bianco, Anthony A...........New York
Bigger, Ralph W.............New York
Bond, Frederick T............Brooklyn
Boyd, Luke H............Bemus Point
Brady, John C................Newburgh
Brady, Warren R....Brightwaters, L. I.
Brett, Wilbur B..............New York
Bromberg, Norbert...........New York
Brown, DeWitt C...............Jamaica
Brown, Herbert R. Jr..........Rochester
Brown, John J..........Bellerose, L. I.
Brush, John M...............New York
Burk, Samuel B..............New York
Cahill, Daniel P.......Ozone Park, L. I.
Carpenter, Alvin R..........Binghamton
Cheever, Francis S..........New York
Childs, David W.............Amsterdam
Coburn, Alvin F........Bedford Village
Cole, James P..................Buffalo
Cox, John......................Jamaica
Cramp, George W..............Brooklyn
Crawley, Charles J..............Brooklyn
Cupaiuoli, Richard A.........New York
Currie, Robert A. Jr..........Lysander
Daniels, Francis R.............Rochester
Deddish, Michael R...........New York
Degenhardt, H. J...Jackson Heights, L. I.
Dennison, Alfred D..........Gloversville
Dingman, James A........Spring Valley
Doran, Robert E.................Geneva
Dorr, William L..................Auburn
Dougherty, Charles E.....New Rochelle
Douglas, Albert H. R......Jamaica, L. I.
Dudley, Henry G..............Brooklyn
Farber, Raphael...............Rochester
Farrow, Franklin C..............Buffalo
Farrow, Joseph H.............New York
Fearon, Henry D..............Brooklyn
Feltman, William.................Albany
Fertig, David..................Scarsdale
Fischbach, Karl..............New York
Fitzgerald, John S..................Utica
Fitzgerald, Thomas M..........Brooklyn
Flynn, Jerome B.............New York
Foote, Lewis D...........Staten Island
Franks, Myron B..............Rochester
Freeman, Jules................New York
Freeman, Rowland G. Jr......New York
Friedman, Benjamin..........New York
Frieri, Anthony F. X...........Brooklyn
Fuchs, John H.....Richmond Hill, L. I.
Gardstein, Henry F............Brooklyn
Garnett, Herman M..........Long Island
Gastal, Joseph S...............Brooklyn
Gephert, John R..............New York
Ginsberg, Harry...............Brooklyn
Glynn, Martin Z..............New York

New York—Continued

Goodman, Edmund N.........New York
Gosselin, Raymond...........New York
Grand, Milton J. H............New York
Greenberg, Samuel U.........New York
Greene, Gerald S.............New York
Greene, Irving...............New York
Greenstein, Nathan M..............Bronx
Gunther, Roy W............Amsterdam
Hackett, Henry C..............Portville
Halperin, Meyer A.............Brooklyn
Hamel, John H. Jr............Syracuse
Hanson, Harry A............Rochester
Harrigan, Gerald B.........Great Neck
Harris, Joseph H............New York
Harris, Robert W...........Williamson
Havill, William H...............Auburn
Heenan, John T.................Bronx
Helmick, Perry L............New York
Henderson, Allen W.............Dexter
Heroy, William W............New York
Hodas, Joseph H..........Jackson Hts.
Holzwarth, Franklin E........Rochester
Hook, Donald W..............Rochester
Horwich, Ivor D...............Flushing
Howard, Campbell............New York
Jaffe, Harry L...............New York
Jenkins, Judson H..........Massapequa
Jones, Herbert M................Auburn
Jones, Richard L............Glen Cove
Kane, Frank P...........Binghampton
Kanof, Abram.................Brooklyn
Kayfetz, Daniel O...........New York
Kazmann, Harold A..........New York
Keet, Ernest E. Jr...Queens Village, L. I.
Kenyon, Byron B..............Bronxville
Klein, Leonard..............New York
Kline, Paul R...............New York
Klinger, Milton E.........Jamaica, L. I.
Knox, Nicholas A...............Bellaire
Krainin, Philip...............New York
Kuskin, Lawrence.............Brooklyn
La Barba, Peter J.............Brooklyn
Lamont, Charles S.........Poughkeepsie
Langman, Louis..............New York
La Raja, Raymond J..........Brooklyn
Larrabee, John H............Johnstown
Lawrence, Andrew W..........Sea Cliff
Lee, Willard J.........Garden City, L. I.
Lenzner, Abraham S.............Buffalo
Leone, Vincent D..........Niagara Falls
Libby, Nathan...............New York
Lill, Nicholas D............Dolgeville
Lohnes, James T. Jr...............Troy
Lonergan, Francis J..............Homer
Lucas, Alfred W...............Hornell
Lytle, Theodore L...............Dunkirk
McAmmond, John F...........Rochester
McCann, Walter J............New York
McGarvey, David F...........Rochester
McGrattan, Victor T.....Elmhurst, L. I.
McManus, James W............Brooklyn
Maloney, William E..............Buffalo
Manning, Donald J.............Brooklyn
Mastrota, James A.............Brooklyn
Meredith, William C.......New Rochelle
Merrill, Elmer F.............New York
Mersheimer, Walter L..........Tuckahoe
Merwarth, Harold R..........Brooklyn
Meyer, Theodore R....Sag Harbor, L. I.
Mitchell, Francis V............Brooklyn
Moore, Donald E..............Syracuse
Morse, Carter R...........Tupper Lake
Murphy, Alvin E.....New Brighton, L. I.
Murphy, Michael J.............Brooklyn
Myers, John R..................DeWitt
Neely, Hugh.......Hastings-on-Hudson
Nettles, Mark K...........Schenectady
Nichols, Frank C..............Sea Cliff
Northway-Meyer, Robert.....Middletown
O'Connell, Clintor P..........New York
O'Connor, John E...........New York
O'Neill, Laurence D........Central Islip
Palmer, Lauchlen S..............Willard

New York—Continued

Pascale, Albert J..............Brooklyn
Peterson, Gerald M...........New York
Pippitt, Richard B...........Port Jervis
Platt, John W.............Poughkeepsie
Pulver, Fred H.............Schenectady
Quinlan, Daniel E.............Brooklyn
Rachun, Alexius........Whitestone, L. I.
Rakov, Harold L...............Kingston
Reich, Harry L.................Brooklyn
Rhame, Harold E..............Brooklyn
Rodin, Melvin..................Brooklyn
Roe, Leon M...................Canisteo
Rooney, James B.................Nyack
Rosen, James M..............New York
Rosenberg, Alexander E...... New York
Rubin, Elias.....................Jamaica
Ruesch, Alfred S.............Great Neck
Sabatini, William A..............Bronx
Sansone, Francis X...............Bronx
Saxl, Newton T..............New York
Saxton, Harold H..............Mayville
Schlosberg, Stanley S.........New York
Schneierson, Samuel J........New York
Schor, Irving M................Brooklyn
Schorr, Richard.................Yonkers
Scotti, Dominick W...........New York
Seelig, Charles A.......Jackson Heights
Seligmann, Arthur W. Jr.....New York
Shepard, Edward M..........New York
Sheppard, Wm. B.............New York
Siris, Joseph H......Kew Gardens, L. I.
Slocum, Milton J.............New York
Smith, Dean D..............Binghamton
Smith, Edward W.........New Rochelle
Smith, Kenneth F.............Millbrook
Smith, Robert W.......Chenango Bridge
Solley, Robert F.............New York
Spingarn, Clifford L...........Brooklyn
Steele, John M...............New York
Steinberg, Israel..............Larchmont
Stockton, Robert S...............Buffalo
Sullivan, William J..............Moravia
Sumers, John.................New York
Sutherland, Arthur M.......White Plains
Szymanski, Frederick J........Rochester
Terman, Irving...............New York
Terry, Giles S..................Scarsdale
Vadney, Claude H..................Utica
Van Ness, Albert W...........Syracuse
Vitolo, Ralph E.........South Brooklyn
Walsh, John D..................Brooklyn
Watson, Paul H...............Newburgh
Westinghouse, Walter D........ Buffalo
Wildman, Henry V...........New York
Witt, Joseph J.....................Utica
Woodman, Ernest L. Jr.......New York

North Carolina

Parrott, John A..................Kinston
Sherman, Claude P............Goldsboro
Wharton, Charles W..........Smithfield
Worley, James H...............Shaeville

Ohio

Barkman, Floyd J.............Wyoming
Boehler, Clement C.........Rocky River
Browning, Joseph A.............Moscow
Christman, Herbert E.........Lakewood
Conry, Erwin L...............Cleveland
Elliott, Philip H...............Zanesville
Kearney, John J...................Piqua
King, Clair B.....................Canton
Kobacker, J. Lester...............Toledo
Kurzner, Meyer...............Cincinnati
LaValle, Joseph C. E..........Cincinnati
McDonald, Andrew W..............Cadiz
Macumber, Harold H..............Ironton
Marsh, Charles W. Jr.....East Cleveland
Maxwell, Joseph A.............Columbus
Perrine, Geo. B...............Cincinnati
Pfarrer, Richard A.................Dayton
Reading, Robert A.......Shaker Heights
Reed, Howard W...................Akron

MEDICAL OFFICERS RELEASED BY THE NAVY

Ohio—Continued

Robishaw, Arthur W.	Elyria
Rusin, Conrad T.	Lorain
Schneider, Richard V.	Toledo
Sidenberg, Stanley S.	Cleveland
Smith, Robert G.	Columbus
Snow, Lee B.	Portsmouth
Solier, Richard W.	Bryan
Spreen, Arthur H.	Cincinnati
Torrence, Elmer R.	Troy
Warburton, Ralph T.	North Canton
Whitacre, Halford E.	Bowling Green
Woldman, Victor F.	Shaker Heights
Yordy, Paul L.	Dayton

Oklahoma

Deupree, Harry L.	Oklahoma City
Peters, James C.	Pawnee
Pigford, Russell C.	Tulsa

Oregon

Anderson, Nels P. E.	Eugene
Blatchford, Roderick C.	Portland
Hawroth, Wallace	Portland
Romig, Ronald C.	Eugene

Pennsylvania

Battle, John D. Jr.	Haverford
Bodine, Francis S.	Kane
Boucher, Irvan A.	Tyrone
Bozzi, Carmel J.	Philadelphia
Brittingham, John T.	Philadelphia
Brundage, John T.	Moscow
Burrows, James H.	Williamsport
Bushyager, Ronald R.	Irwin
Butt, Hugh R.	York
Calhoun, Hugh H.	Bryn Mawr
Casillo, August V.	Pittsburgh
Cava, Joseph J.	Philadelphia
Chapple, Charles C.	Philadelphia
Clay, Joseph V. F. Jr.	Bryn Mawr
Cole, Richard S.	Greensburg
Cornelius, Chalmers E.	Jenkintown
Courtney, John J.	Ardmore
Crooks, Philip E.	Patton
Crothers, Wesley G.	Chester
Dengler, Ernest H.	Pottstown
De Orsay, Ralph H.	Drexel Hill
De Quevedo, Nestor E.	Factoryville
Dickinson, Everett H.	Philadelphia
Dileo, Luscian W.	Allentown
Donaldson, Robert D.	Kane
Dragan, George A.	Clairton
Dunbar, William	Philadelphia
Dunn, James W.	Clifton Heights
Dyson, William L.	Hazelton
Eaton, Hamblen C.	Harrisburg
Fogel, Ernest J.	Windber
Follweiler, Robert A.	Tamaqua
Gadd, Howard W.	Monongahela
Gambescia, Pasquale J. C.	Philadelphia
Gibson, William E.	Pittsburgh
Gibbons, John P.	Plains
Gill, John J.	Wilkes-Barre
Giordano, Hamlet R.	Bristol
Glassburn, John R.	Wilkinsburg
Glauser, Frank	Philadelphia
Grace, James J.	Montrose
Graham, Marshall W.	Washington
Geigle, Carl F.	Philadelphia
Hannen, Allen J.	Williamsport
Harveson, Theodore K.	Philadelphia
Heller, Henry K.	Bethlehem
Hobbs, Wayne	Philadelphia
Hoffa, John A.	Ambler
Horwitz, Orville	Haverford
Howell, William M.	Avoca
Hughes, Joseph P.	Monongahela
Hunt, Albert R.	Wayne
Hunt, William R.	Duquesne
Hutchison, Lloyd S.	Lancaster
Jacox, Harold W.	Pittsburgh
Jaffe, Beryl	Philadelphia
James, Paul M.	Ardmore

Pennsylvania—Continued

Jarvis, Frederick W.	Philadelphia
Jones, Charles P.	South Forth
Jones, Hubert N.	Wilkes-Barre
Jones, John W.	Pottsville
Jones, Donald T.	Media
Johnson, Samuel H. III	Pittsburgh
Kidd, John M.	Mifflintown
Kirchhofer, Lewis H.	Penfield
Kline, David W.	Philadelphia
Korns, Miller J.	Somerset
Kressler, Robert J.	Philadelphia
Lang, Leonard P.	Philadelphia
Larsen, Erling N.	DuBois
Lear, Benjamin F.	Vandergrift
Levine, Arnold S.	Merion
Lewis, David E.	Scranton
Lomax, Joseph	Philadelphia
Longaker, George M. Jr.	Pottstown
McCombs, Robert P.	Jenkintown
Malley, William L.	Pittsburgh
Marquis, Robert A.	Monaca
Matys, Edmund V.	Dupont
Meanor, Harold H. Jr.	Coraopolis
Mengel, Sterling F.	Schuylkill Haven
Mohan, John Q.	Philadelphia
Montgomery, Bruce	Fairchance
Myers, William A.	York
Nettrour, Walter S.	Pittsburgh
Novatney, Raymond C.	Springfield
Olsen, Axel K.	Sayre
Orr, Theodore E.	Media
Patton, Thomas B.	Philadelphia
Penny, George E.	Ardmore
Perry, Samuel W. Jr.	New Castle
Perry, Solomon P.	Sayre
Pokrass, Frederick P.	Reading
Porreca, George A.	Philadelphia
Pratt, John W. II	Coatesville
Ramsey, Frank M. Jr.	Chestnut Hill
Ramsey, William B. II	Bryn Mawr
Rebbeck, Elmer W.	Pittsburgh
Renz, Millard F.	Erie
Rome, Howard P.	Philadelphia
Rosenthal, Alexander H.	Waston
Runk, Lorenzo G. Jr.	Philipsburg
Sarni, Caesar F.	Pottstown
Schmid, William A.	Washington
Schwalm, Leslie J.	Pottsville
Scott, James C.	Berwyn
Scott, Joseph W.	Roscoe
Shapiro, Robert	Philadelphia
Shaughnessy, Wm. J.	Kingston
Shelton, Joseph M.	Washington
Shoemakee, Robert III	Hatboro
Shugert, Guy S.	Wampum
Speer, Andrew B.	Pittsburgh
Sprague, David W.	Pittsburgh
Straub, Charles W.	Middleburg
Trachtenberg, Harry B.	Philadelphia
Tucker, Thomas W.	Spring City
Turville, Charles S.	Drexel Hill
Uhle, Charles A. W.	Whitemarsh
Weikel, John G.	Belleforte
Weissbach, Wm. H. Jr.	Pittsburgh
Westfall, Wilbur W.	Somerset
Willard, John H.	Philadelphia
Williams, Lewis D.	Plymouth
Yahraus, Jack L.	Bentleyville

Tennessee

Bell, Spencer Y.	Knoxville
Eberhart, John J.	Nashville
Johnson, George S.	Nashville
Young, Thomas K. Jr.	Memphis
Womack, Frank C. Jr.	Nashville

Texas

Baker, Edmund F.	Ennis
Barnes, George B.	Trinity
Barnett, John L.	San Antonio
Bradford, Francis K.	Houston
Brindley, Claunch G.	Kingsville
Brumfield, Fred O.	San Antonio

Texas—Continued

Chaney, Clyde E.	Eastland
Cline, William B. Jr.	Corpus Christi
Cox, Emelious A. Jr.	Brenham
Coyle, Edward W.	San Antonio
Donaghey, Charles J.	Trenton
Downs, Seth R.	Kilgore
Draper, Leonidas Mc.	Borger
Flack, Julius V.	Dickinson
Henry, Albert C. Jr.	Smithville
Holt, Jordan O. S. Jr.	Dallas
Gardner, Robert A.	Houston
Jinkins, Wiley J. Jr.	Galveston
Keene, Albert H.	Dallas
Knapp, Roger S.	Arkansas Pass
Lockhart, Jesse C.	Goose Creek
Luedemann, Waldo S.	San Antonio
Mast, Henrie E.	Lubbock
Mathis, Alvin L.	Austin
Mills, James T.	Dallas
Mitchell, Archie L.	Marshall
Mitchell, Douglas G.	Fort Worth
Parr, Luther H.	Houston
Richardson, James K.	Sweetwater
Richardson, Oswald J.	Allison
Rose, John A.	Houston
Simmons, Daniel C.	Kilgore
Taylor, William C. Jr.	Calvert
Williams, Edward S.	Lubbock
Williams, Jesse B.	Seguin

Virginia

Barksdale, Lee S.	Hopewell
Cole, Edward L. Jr.	Charlottesville
Cornlund, Philip R.	Norton
Crandall, Wm. D.	Alexandria
Finch, Frederick L.	Richmond
Gillespie, Barnes	Hilton Village
Gordon, Marshall P. Jr.	Richmond
Haas, John P.	Norfolk
Hamilton, John R.	Nassawadox
Lee, Claude M. Jr.	Charlottesville
Milchin, Sam N.	Richmond
Moorman, Elmer R.	Kilmarnock
Morrison, Frederick M.	Lynchburg
Nemuth, Harold I.	Portsmouth
Phillips, Paul L.	Norfolk
Pringos, Andrew A.	Petersburg
Proffitt, John A.	Richmond
Rawls, Japheth E. Jr.	Suffolk
Riley, Chester L.	Winchester
Roode, Albert G.	Bedford
Smoot, John L.	Richmond
Taylor, Francis N.	Petersburg
Vaughan, George D. Jr.	Richmond
Westcott, Henry H.	Roanoke
White, Matthew J. W. Jr.	Luray
Whitman, William R. Jr.	Roanoke
Williams, Ennion S.	Richmond
Williams, Robert	Norfolk
Woodward, Lewis K. Jr.	Front Royal
Wornal, Lacey S.	Richmond
Yates, Harold T.	Charlottesville

Washington

Benson, Reuben A.	Bremerton
Brilhart, Kenneth B.	Seattle
Chase, Edwin B.	Everett
Clancy, John	Townsend
Coglon, Roger B.	Yakima
Friend, Austin G.	Seattle
Hanks, Thrift G.	Seattle
Harris, Waldo E.	Spokane
Harvey, Fred C.	Spokane
Haven, Hale A.	Seattle
Hennings, Francis W.	Tacoma
Kretz, Alexander W.	Hoquiam
Lackie, Lloyd F.	Seattle
Leavitt, Harry L.	Seattle
Lynch, Herbert C.	Yakima
McCoy, Kenneth M.	Spokane
O'Hare, John F.	Mercer Island
Shaw, Joseph W.	Seattle

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Barnes, Justus M., Lt. Col., 18 Wilson St., Montgomery.
Bibb, Robert C., Capt., 515 Locust St., Huntsville.
Blake, William A., Capt., 1958 St. Stephens Rd., Mobile.
Cherry, Alfred, Major, 2430 11th Ave., North Birmingham.
Johnson, George L., Lt. Col., Vet. Adm. Facility, Tuscaloosa.
Lewis, Arthur N., Lt. Col., 800 St. Anthony St., Mobile.
Little, Joe H., Lt. Col., 2309 Wilson Ave., Mobile.
Manasco, Hobson, Capt., Carbon Hill.
Owsley, Lawrence H., Capt., Eclectic.
Russell, Paul T., Capt., Burchfield Hotel, Tuscaloosa.
Silberman, Donald J., Capt., 928 Linwood Rd., Birmingham
Snoddy, William T. Jr., Capt., 1724 31st Ave. N., Birmingham.
Snow, James S., Major, 2620 11th Ave., S., Birmingham.
Thomas, Benjamin F., Major, 114 S. Gary St., Auburn
Varner, William D., *Capt., 209 N. 9th St., Opelika.*

Arizona

Bregman, Edward H., Capt., Box 452, Tombstone.
Lewis, Reinhard B., Capt., Copper Queen Hos., Bisbee.
Thompson, Harry E., Capt., 1005 Valley Nat. Bldg., Tucson.

Arkansas

Adair, Thomas L., Capt., Bald Knob.
Eldridge, John E., Capt., 608 N. Forrest St., Forrest City.
Ellis, Jack R., 1st Lt., 130 Hobson Ave., Hot Springs.
Harris, Charles P., Capt., 1315 Main St., Jonesboro.
Nixon, Ewing M., Capt., 1008 Danaghey Bldg., Little Rock.
Shearer, *William F., Capt., 4316 S. Lookout St., Little Rock.*
Washburn, A M., Lt. Col., 5501 Sherwood Rd., Little Rock.

California

Alsberge, Marden A., Major, 1420 Glenwood Road, Glendale.
Alward, Harold C., Major, 838 5th Ave., Los Angeles.
Austin, John H., Capt., 276 W. College St., Covina.
Balch, Harry E., Capt., 337 N. Monterey, Alhambra.
Ballou, William W., 1st Lt., 3840 Sherman Way, Sacramento.
Barnard, James F., Lt. Col., 9259 Magnolia Ave., Arlington.
Barnes, Myron C., Major, 125 West F St., Ontario.
Bennetts, Frederick A., Major, 846½ S. Plymouth, Los Angeles.
Blackmun, Ernest L., Capt., 1561 W. Walnut St., Stockton.
Blackmun, Robert L., 1st Lt., 3225 Lowry Road, Los Angeles.
Bobbitt, James R., Capt., 777 Old Mill Rd., Pasadena.
Boim, Leon, Capt., 1543 Market St., Redding.
Bray, Olin D., Capt., 1366 Boston St., Altadena.
Briggs, John D., Major, Weaverville.
Bullock, Lewis T., Major, 1136 W. 6th St., Los Angeles.
Burleson, Ferris C., Capt., San Jose Hosp., San Jose.
Burns, Robert A., Capt., Woodland Clinic, Woodland.
Castiglione, John B., Capt., 966 Randolph St., San Francisco.
Chinn, Silas, Capt., 1050 Washington St., San Francisco.
Christian, Sam G., Major, 1801 Third Avenue, Sacramento.
Cohn, Herbert J., Lt. Col., 283 28th Avenue, San Francisco.
Comparette, Homer L., Major, Rancho Los Amigos, Hondo.
Cooley, Fred E. Jr., Capt., 205 Alta Ave., Dinuba.
Coshow, George H., Capt., 1007 Valecito Rd., Carpinteria.
Davis, Fred J. Jr., 1st Lt., 920 Pine St., Susanville.
Dixon, William B., Capt., 11035½ Strathmore Dr., Los Angeles.
Dorcy, Laurence H., Major, *2315 Washington, San Francisco.*
Edmeades, Donald T., Capt., 3322 Minto Ct., Los Angeles.
Eisen, George, Capt., 265 Fell St., San Francisco.
Eliaser, Maurice Jr., Major, 490 Post St., San Francisco.
Emery, Wilfred H., Capt., 3704 Lowell Ave., Los Angeles.
Fogel, David, Capt., 1200 N. State St., Los Angeles.
Fowler, *Donald* C., Major, 17 Cornelia Avenue, Mill Valley.
Fowler, John D., Major, 710 N. June St., Hollywood.
Fox, Norman C., Capt., 421 Linden Ave., San Bruno.
Freibrun, Jacob L., Capt., 1133 Point View St., Los Angeles.
French, William F., *Capt., 2827* Wynwood Lane, Los Angeles.
Fulton, Lee D., Capt., 2415 Jones St., San Francisco.
Furer, Stanford A., Capt., 1200 N. State St., Los Angeles.
Galbraith, Harold F., Major, 215 E. Commonwealth, Fullerton.
Garrett, Franklin H., Capt., Camarillo State Hosp., Camarillo.
Gibboney, Don B., Capt., 1908 Rodney Dr., Los Angeles.
Hatlelid, Frank H., Lt. Col., 190 27th Ave., San Francisco.
Hawkins, Joseph O., Major, 199 *Mountain View* Avenue, San Rafael.
Hill, Walter B., Capt., 160 Oak St., Laguna Beach.
Holaday, David D., Capt., 2019 Notre Dame, Belmont.
Homme, Owen H., Major, 105 S. Kilkea Dr., Los Angeles.
Hunt, Guy M. Jr., Capt., 1200 N. State St., Los Angeles

California—Continued

Johnson, James B., Major, 1930 Wilshire Blvd, Los Angeles
Kibby, Sydney V., Lt. Col., 1144 Elizabeth St., Pasadena.
Krupocki, Peter S., Major, 1537 East C St., Alturas
Lewis, Elmer W., Capt., 127 4th St., Petaluma.
Lund, Grant V., Capt., 102 N. *Brand St., Glendale.*
Meyer, Hans A., Capt., 63 Seal Rock Dr., San Francisco
Moore, Oliver M., Major, 6923 State St., Huntington Park.
Nelson, Harold O., Major, 302 Oliver St., Guadalupe.
Newgard, *Kurt W., Capt., 35 Palm Avenue*, San Francisco
Ostrander, Harold R., Capt., 1355 Wilshire Blvd., Los Angeles
Papkin, George, Major, 2423 St. George St., Los Angeles
Parks, Floyd R., Major, 210 S. *Norton Ave., Los Angeles*
Premo, Milton A., Capt., Sainte Claire Bldg., San Jose.
Present, Arthur J., Major, 358 Belvedere St., La Jolla.
Price, William H., Capt., 2400 S. Flower St., Los Angeles.
Reese, John D., Major, 1426 Henry St., Berkeley.
Ritchie, Douglas W., Lt. Col., Temple City.
Ross, Samuel, Major, 2603 21st Ave., San Francisco.
Rosenvold, Llyod K., Major, *1687 Hill Dr.*, Eagle Rock.
Rubenstein, Victor G., Lt. Col., 4121 Second St., Riverside
Rue, George H., Capt., 3850 8th St., Riverside.
Schroer, William J., Capt., 1901 N. Flower St., Santa Ana.
Svoboda, Frank C., Lt. Col., 3105 33rd St., San Diego.
Swift, Coe T., Capt., 211 High St., Madera.
Thompson, G. D. C., Major, 2293 Washington, San Francisco
Tomlinson, W. J., Major, 980 Hot Springs Rd., Santa Barbara
Tucker, Sidney N., Lt. Col., 1746 9th Ave., San Francisco.
Woo, Henry B., Capt., 750 Grant Ave., San Francisco.
Wylie, Charles R., Major, *965* Gretna Green Way, *Los Angeles*
Wyne, Paul S., Capt., 450 Sutter St., San Francisco.
Zumwalt, Elmo R., Lt. Col., 424 E. Tulare St., Tulare.

Colorado

Arneill, James R. Jr., Lt. Col., 110 S. University Blvd., Denver.
Frumess, Gerald M., Major, 1635 Hudson, Denver.
Garvin, Galen D., Capt., 1901 Arapahoe St., Golden.
Giehm, Rudolf E., Lt. Col., 1025 Monaco Parkway, Denver.
Harvey, Robert P., Major, Limon.
Liggett, William A., Major, 1324 Ash St., Denver.
Lipan, Edward M., Major, 354 Columbine St., Denver.
Livingston, Robert R., Capt., Glenwood Springs.
Maconber, *Douglas W., Major, 4301 E. 6th Ave.*, Denver.
Richie, George T., Major, 570 High St., Denver.
Roark, Frank E., 1st Lt., 1510 Clermont St., Denver.
Sage, Bernard A., Major, 1616 Olive St., Denver.
Shivers, George C., Lt. Col., 6 N. Tejon St., Colorado Springs
Sunderland, Karl F., Capt., 1551 Ivanhoe St., Denver.
Swigert, John L., Major, *1746* Kearney St., Denver.
Varian, Robert A., Capt, 1311 Marion St., Denver.

Connecticut

Beecher, Gilbert H., Capt., 78 Columbia Blvd., Waterbury.
Chait, Sidney A., Capt., 39A S. Main St., Middletown
Cheney, Charles B., Capt., Hamden.
D'Alessio, Charles M., Capt., 75 Seymour Ave., Derby.
Kearney, William H., Capt., 406 Newfield Ave., Bridgeport
Moore, Gilbert E., Major, 162 Post Rd., Darien.
Reichenbach, Alfred E., Capt., 165 N. Main St., Waterbury.
Robinson, David, Capt., 14 Chatham St., Hartford.
Swarts, William B. Jr., Major, 5 Glen Court, Greenwich.
Vermooten, V. D., Major, 34 Cold Spring St., New Haven
Welch, Winthrop S., Capt., Hartford Hosp, Hartford
Whitman, Loring, Major, Searles Rd., Darien.
Williams, Edward E., Major, 269 Church St., Naugatuck.
Yavis, *John* C., Major, 115 Dwight St., New Haven.

Delaware

Davidson, Douglas T. Jr., Major, Overlook, Claymont.
Gehret, Andrew M., Lt. Col, 311 N. Broom St, Wilmington

District of Columbia

Elliott, Israel E. Jr., Capt., 1221 W St. N.W., Washington
Gartlan, *B.* W., Capt., *4577* McArthur Blvd. N.W., Washington.
Gwynn, Henry B., Major, 4619 Charleston Ter., Washington.
Kepecs, Joseph G., Capt, St. Elizabeth's Hosp, Washington
Lady, William T., Capt., 130 12th St. N.E., Washington.
Pelzman, Ivy A., Col., 1835 Eye St. N.W., Washington.
Simmons, A. Hugh, Major, 2358 6th St. N.W., Washington
Smith, Clarke L. Jr., Capt., 311 T St. N.W., Washington.
Thurston, Roger *G.* Jr., Capt., 1414 *Montello* N.E, Washington
Widome, Allen, Major, 402 Kentucky Ave. S.E, Washington.

PHYSICIANS SEPARATED FROM SERVICE

Florida

Chappell, John R., Lt. Col., 733 Euclid Ave., Orlando.
Cullipher, Edward W., Major, S.W. 22d Terrace, Miami.
Drabek, Leonard A., Capt., Jackson Mem. Hosp., Miami.
Hartman, Sam F., Capt., 3490 13th Ave. S., St. Petersburg.
Keith, Gaines W., Capt., 1255 Peachtree St., Jacksonville.
Knowlton, Horace A., Major, 3109 Oaklyn Ave., Tampa.
Neal, Elwin G., Major, St. Vincent's Hosp., Jacksonville.
Pierce, Francis D., Lt. Col., 420 Sweet Bldg., Fort Lauderdale.
Range, Irving, Major, 15510 E. 1st St., Redington Beach.
Rogers, Hunter B., Capt., 27 N.W. 12th Ave., Miami.
Simmons, Irving E., Capt., Gadsden Co. Health Unit, Quincy.
Thomas, Efton J., Capt., 8834 Abbott Ave., Miami Beach.
Tomlinson, John P. Jr., Capt., 738 Cohassett Ave., Lake Wales.
Whitmer, Kenneth S., Capt., 1110 Huntington Bldg., Miami.

Georgia

Allen, Clarence C., Capt., 403 19th St., Columbus.
Bateman, Needham B. Jr., Lt. Col., 522 Candler Bldg., Atlanta.
Bowling, Jackson M., Capt., Forest Park.
Brown, Randall G., Capt., P. O. Box 123, Graymont.
Castellow, William F., *Lt. Col.,* 121 W. College St., Americus.
Cooper, Charles F. Jr., Major, 1309 Oglethorpe St., Macon.
Davidson, David E., Capt., 1857 Peachtree Rd., Atlanta.
Evans, Edwin C., Major., Macon Rd., Route 5, Milledgeville.
Gold, Perry, Capt., 542 Capitol Ave. S.E., Atlanta.
Goodyear, W. E., Capt., 1223 Emory Dr., Emory University.
Greenberg, Irving L., Capt., 898 Washington St. S.W., Atlanta.
Grove, Edward W., Lt. Col., Riverside Dr., Gainesville.
Hammett, Howard H. Jr., Capt., 201 Gordon St., LaGrange.
Holder, James S., Major, 600 Winzor Ave., LaGrange.
Jarratt, William D., Major, 134 Magnolia St., Macon.
Jones, John P., Capt., 236 Stanislaus Circle, Macon.
Ketron, Hubert W., Major, 2915 N. Hills Rd., Atlanta.
Martin, Robert B. III, Major, Cuthbert.
McCurdy, James W., Major, 221 N St., Thomaston.
Miller, John M., Capt., 805 E. Henry St., Savannah.
Mitchell, Charles H., Major, 124 Superior Ave., Decatur.
Phinizy, Irvine, Lt. Col., 2330 Kings Way, Augusta.
Riser, Wm. H. Jr., Lt. Col., 3109 Ridgewood Rd. N.E., Atlanta.
Sappington, Thomas A., Major, Box 609, Thomaston.
Skiles, William V. Jr., Capt., 1057 Springdale Rd., Atlanta.
Smoot, Richard H., Capt., 181 Coventry Rd., Decatur.
Sutton, James M. Jr., Capt., 123 Isabella, Sylvester.
Walton, Charles R., Lt. Col., Veterans Admin., Augusta.
Whitaker, William G. Jr., Capt., 50 Armstrong St., Atlanta.
Young, George G., Major, LaFayette.

Idaho

Davies, Dale H., Capt., 315 N. 18th St., Boise.
Krueger, Alexander A., Capt., Ashton.
Newton, Abram M., Lt. Col., 529 S. 7th Ave., Pocatello.
Rawlinson, Ronald P., Capt., 114 N. Commercial St., Emmett.

Illinois

Adamski, Edwin J., Capt., 6448 N. Nashville Ave., Chicago.
Afremow, Melvin L., Major, 5200 Sheridan Rd., Chicago.
Baker, Norman L., Capt., 8257 S. Ellis Ave., Chicago.
Barron, Elmer A., Capt., 5437 W. Monroe St., Chicago.
Baxter, Ralph E., Capt., Children's Mem. Hospital, Chicago.
Beatty, Jackson D., Lt. Col., 404 Calhoun St., Morris.
Binswanger, Herbert F., Capt., 5021 Woodlawn Ave., Chicago.
Boehm, William F. Jr., Capt., 816 S. Ashland Blvd., Chicago.
Borkon, Eli L., Capt., 810 S. Elizabeth St., Carbondale.
Bousfield, Midian O., Col., 9323 S. Michigan Ave., Chicago.
Brodsky, Abraham, Capt., 827 Lakeside Pl., Chicago.
Byfield, George V., Major, 2970 N. Sheridan Rd., Chicago.
Campbell, James B., Major, 912 S. Wood St., (NP Inst.) Chicago.
Cant, John F., Capt., 3 S. Prospect Ave., Park Ridge.
Casciato, John J., Capt., 3108 W. Congress St., Chicago.
Ceaser, Leonard S., Capt., 5607 W. Lake St., Chicago.
Countryman, Howard D., Lt. Col., 1805 Clinton St., Rockford.
Dill, Loran H., Major, 7150 Crandon Ave., Chicago.
Dillon, Walter F., Capt., 1133 E. 81st Pl., Chicago.
Doescher, Paul F., Major, 211 N. Elmwood Ave., Oak Park.
Donoghue, Edmund R., Capt., 5201 S. Park Ave., Chicago.
Dooley, Samuel W., Capt., 614 E. Walnut St., Bloomington.
Douglass, Thomas C., Lt. Col., 303 E. Superior St., Chicago.
Doyle, Francis E., Capt., 102 LeMoyne Parkway, Oak Park.
Dresner, Milton H., Lt. Col., 7025 Merrill Ave., Chicago.
Evans, Harvey A., Capt., 703 Catherine St., Metropolis.
Faletti, Anthony J., Capt., 1011 Lake St., Oak Park.
Faulk, Elliott, Capt., 2012 N. Broadway, Shelbyville.

Illinois—Continued

Fiore, Frank F., Capt., 1656 W. 63d St., Chicago.
Flannery, Marvin G., Col., 424 Barton Place, Evanston.
Flentie, Edgar H., Major, 5948 W. Superior, Chicago.
Flickinger, George H., Capt., Hopedale.
Glashagel, Edward E., Capt., 480 Oakhill Rd., Elgin.
Glassman, Frank, Major, 710 Bittersweet Pl., Chicago.
Greenwood, Robert C., Major, 5515 Woodlawn Ave., Chicago.
Grissom, Robert L., Capt., 461 S. Seigel, Decatur.
Heller, Richard E., Capt., 6843 Cornell Ave., Chicago.
Hirschtick, Allan B., Capt., 1601 S. Kedzie, Chicago.
Isenberg, Howard L., 1st Lt., 3951 W. Congress St., Chicago.
Jurek, Ladislaus J., Capt., 6459 S. Whipple St., Chicago.
Karr, John B., Capt., 6627 S. Artesian, Chicago.
Katz, Charles, Capt., 2041 Pierce Ave., Chicago.
Kodl, Francis, Capt., 1801 S. Throop St., Chicago.
Kolb, Harold J., Capt., Benson.
Krueger, Francis J., 1st Lt., 3014 W. Fullerton Ave., Chicago.
Kruglick, John S., Capt., 6445 N. Fairfield Ave., Chicago.
Kucharski, Stanley C., Capt., 2221 W. Augusta Blvd., Chicago.
Kuchynka, Otto G., Capt., 2531 N. Mango Avenue, Chicago.
Lange, Howard L., Lt. Col., 903 East "B" St., Belleville.
Lawton, Stanley E., Lt. Col., 122 S. Michigan Ave., Chicago.
Lerner, Isadore, Capt., 736 Rose St., Kewanee.
Madden, Leo L., Capt., 73 Country Pl., Belleville.
Magree, Montie, Major, 629 S. 19th Avenue, Maywood.
Milcarek, Leonard J., Capt., 2430 N. Lotus Ave., Chicago.
Morrison, Allen R., Major, 1614 S. 15th Ave., Maywood.
Nadherny, George C., Capt., 2307 S. 60th Ct., Cicero.
Nehf, Albert, Major, 1031 S. Lincoln Ave., Kankakee.
Newman, Leon, Major, 6200 N. Kenmore Avenue, Chicago.
Nowak, Frank J., Capt., 6110 S. California Ave., Chicago.
O'Connor, John W., Capt., 220 Moss Ave., Peoria.
Ohrenstein, Irving R., Capt., 1120 S. Karlov, Chicago.
O'Neil, Hugh B., Capt., 1220 N. State St., Chicago.
Palumbo, Carl F., Capt., 529 N. Aberdeen St., Chicago.
Peters, Frank S., Capt., 1753 W. Congress St., Chicago.
Quinn, Everett R., Major, 5th & Edwardsville Road, East Alton.
Ragins, Alex B., Lt. Col., 7719 S. Kingston Ave., Chicago.
Rathbun, George E., Capt., Preemption.
Roberts, Jack, Capt., Lockport.
Rothschild, Robert R., Capt., 1380 Hyde Park Blvd., Chicago.
Rumore, Peter C., Major, 120 S. Oak St., Effingham.
Ryan, Lawrence D., Capt., 615 Deming Place, Chicago.
Salvatore, Anthony G., Capt., 403 S. Pine St., Zeigler.
Savage, John L., Major, 2650 Ridge Avenue, Evanston.
Schafer, Robert, Major, 7133 E. End Ave., Chicago.
Schneider, Max, Capt., 853 Vernon Ave., Glencoe.
Smith, Charles J., 1st Lt., 2537 S. Prairie Ave., Chicago.
Solander, Carl K., Capt., 530 Arlington Pl., Chicago.
Stoll, Charles G., Major, Sumner.
Tourney, Guy L., Capt., 325 S. 14th St., Quincy.
Tovarek, Joseph J., Capt., 1348 S. Harvey Avenue, Berwyn.
Trauba, Norbert C., Lt. Col., Vet. Admin. Facility, Hines.
Trimmer, Albert O., Capt., Cerro Gordo.
Tyllas, Harry A., Capt., 6217 Drexel Ave., Chicago.
Walker, Frederick E., Capt., 2442 N. Orchard St., Chicago.
Warsaw, Eugene, Capt., 6951 Merrill Avenue, Chicago.
Waud, Sidney P., Lt. Col., 223 E. Delaware St., Chicago.
Welch, James K., Capt., Cuba.
Wright, Nelson A. Jr., Capt., 1450 Park Ave., Pekin.
Yesinick, L., Capt., 4745 Ellis Ave., Chicago.
Young, Henry M., Major, 231 E. Superior St., Chicago.
Zaborsky, Emil R., Capt., 6347 S. Kedzie, Chicago.

Indiana

Avery, Bruce F., Capt., 1948 Wespark Ave., Whiting.
Cohn, Alvin F., Capt., 406 W. Tipton St., Seymour.
Connell, Paul S., Major, 117 W. Adams St., Plymouth.
Culbertson, Carl S., Lt. Col., 531 N. Main St., South Bend.
Davis, George D., Capt., 5835 Rosslyn Ave., Indianapolis.
Dian, August J., Capt., 729 Broadway, Gary.
Dusard, Joseph C., Major, 1405 21st St., Bedford.
Edwards, William F., Major, 615 Beharrell Ave., New Albany.
Egbert, Herbert L., Capt., 2912 E. 16th St., Indianapolis.
Herendeen, Elbie V., Capt., 317 W. 7th St., Rochester.
Hewitt, Marshall I., Major, 1702 Sunnymede Ave., South Bend.
Hunt, Gayle J., Capt., 420 S. 23d St., Richmond.
Isler, Nathaniel C., Major, 901 Morningside Dr., Jeffersonville.
Kennedy, Hunter F., Capt., 822 N. Denny St., Indianapolis.
Little, John W. Jr., Major, 530 Powell Pl., Indianapolis.
Lund, Leonard C., Major, 115 E. Walnut St., Argos.
McLaughlin, Calvin P., Lt. Col., *200 W. State St., Pendleton.*

PHYSICIANS SEPARATED FROM SERVICE

Indiana—Continued

Malott, Frederick R., Major, Converse.
Morris, Warren V., Major, 410 S. Main St., Monticello.
Mount, Mathias S., Major, 340 W. Mechanic St., Bloomfield.
Oliphant, Frank W., Capt., 701 Mulberry St., Mount Vernon.
Paulissen, George T., Capt., 2363 N. Alabama St., Indianapolis.
Porter, Carl M., Capt., 124 Cook St., Jasonville.
Rang, Robert H., Capt., 211 N.E. 9th, Washington.
Richard, Norman F. III, Capt., 29 W. Mechanic, Shelbyville.
Rosenbloom, Philip J., Capt., 2035 W. 4th Pl., Gary.
Salb, Max C., Capt., 1120 N. Pennsylvania, Indianapolis.
Schulhof, Maurice G., Major, 1408 Wheeling Ave., Muncie.
Sicks, O. W., Lt. Col., 5609 N. Pennsylvania St., Indianapolis.
Sparks, Alan L., Major, 4310 Central Ave., Indianapolis.
Sweet, Howard E., Lt. Col., 215 Med. Arts Bldg., Richmond.
Tremor, V. F., Lt. Col., 2401 Cold Springs Rd., Indianapolis.
Van Epps, Eugene F., Capt., 27 W. St. Joseph St., Indianapolis.
Ward, James W., Capt., 316 Lincoln Way E., Mishawaka.
Weinstein, Louis, Capt., Vet. Admin. Facility, Marion.
Whitlatch, Arthur A., Lt. Col., Milan.

Iowa

Adams, Marvin E., Capt., 2010 6th Ave., Apt. 4, Des Moines.
Bennett, Geoffrey W., Lt. Col., 827 S. 2d St., Oskaloosa.
Crowley, Frederick A., Capt., 648 Harwood Dr., Des Moines.
Ellison, George M., Major, 1120 2d Ave. S., Clinton.
Lehr, Sylvan M., 1st Lt., 205 14th St. S.E., Cedar Rapids.
McElhinney, William T., Major, 2 Bella Vista, Iowa City.
O'Connell, John R., Major, 1435 1st Ave., N., Ft. Dodge.
Paschal, George A., Capt., Box O, Williams.
Peek, Levin H., Capt., Lake City.
Petersen, Millard T., Capt., 810 Spruce St., Atlantic.
Scharle, Theodore, Capt., 2080 Roosevelt St., Dubuque.
Seibert, Cecil W., Major, 105 Roosevelt Dr., Waterloo.
Stauch, Omar A., Capt., Whiting.
Sternhill, Isaac, Capt., 729 Forrest Dr., Council Bluffs.
Tamisiea, Francis X., Capt., 313 N. 3rd St., Missouri Valley.
Tindall, Robert N., Major, LeMars.

Kansas

Beebe, Edmer, Capt., E. Cedar St., Olathe.
Coughlin, Samuel T., Major, 545 W. 7th St., Larned.
Ellis, Stephen S., Major, 201 W. New St., Coffeyville.
Kosar, Clarence D., Major, 719 W. 8th St., Concordia.
Martin, Earl A., Capt., Oskaloosa.
McKean, Willis H., Major, 1620 Bradish Rd., Kansas City.
Reece, Adelbert S., Capt., Gardner.
Richardson, Lyman K., Col., 5328 Belinder Rd., Kansas City.
Sanders, George E., Capt., 927 S. Broadway, Leavenworth.
Unruh, Rudolph T., Capt., Goessell.
Weaver, James B., Lt. Col., 5103 Hudson Rd., Kansas City.

Kentucky

Abell, William I. Jr., Capt., 1433 S. 3d St., Louisville.
Atherton, Charles V., Capt., 2214 Walterdale Ter., Louisville.
Brown, Felix M., Capt., 1637 S. Main St., Hopkinsville.
Dickinson, Lewis, Capt., 321 W. Washington, Glasgow.
Dorger, John A., 1st Lt., Rt. 4, Cresent Rd. & Dix Highway, Fort Mitchell.
Hoffman, Delbert G., Capt., 4500 Meridale Ave., Louisville.
Humphrey, Edward C., Capt., Beaumont Ave., Harrodsburg.
Johnson, William O., Lt. Col., 72 Valley Rd., Louisville.
Martin, Herman E., Major, 1504 Bath Ave., Ashland.
Nickell, William H., Capt., West Liberty.
O'Donnell, William F. Jr., Capt., Lancaster Ave., Richmond.
Orr, Robert A., Lt. Col., 210 W. Walnut St., Mayfield.
Osler, George E., Capt., 106 16th St., Newport.
Payne, Minor B., Capt., Blue Diamond.
Pipes, James L., Capt., Moreland.
Pope, Mason G., Capt., W. Main St., Richmond.
Prichard, Hubert J., Capt., 3216 Oakland Ave., Catlettsburg.
Reardon, Frederick Jr., Capt., 638 Main, Bowling Green.
Schwegman, Cletus W., 1st Lt., 129 Ohio Ave., Fort Thomas.
Smiser, Harmon T., Major, Cynthiana.
Stacy, Adam Jr., Major, Pineville.
Sugarman, Benjamin E., Capt., Williamstown.
Van Arsdall, C. B. Jr., Capt., 1024 Beaumont, Harrodsburg.

Louisiana

Adler, Hartwig M., Capt., % W. Irving Moss, 447 Audubon St., New Orleans.
Carriere, Samuel Jr., Capt., Gilbert.
Everett, William F., Capt., Oak Grove.
Gardiner, George L. Jr., Capt., Gueydan.

Louisiana—Continued

Golden, Abe, Capt., 2 Everett Pl., New Orleans.
Hamilton, Andros S., Lt. Col., 1300 Island Dr., Monroe.
Herring, John S., Major, 1229 Cadiz St., New Orleans.
Kushner, Louis Z., Major, 714 Division St., Lake Charles.
Kyle, William W., 1st Lt., 21 Neron Pl., New Orleans.
LeDoux, Marion J., Major, 2007 Estlanade Ave., New Orleans.
Lubritz, Ephraim, 1st Lt., Amite.
McVea, Charles, Major, Box 1732, Baton Rouge.
Nelson, Edward W., Major, 4407 Canal St., New Orleans.
Norman, W. D., Capt., 7709 St. Charles Ave., New Orleans.
Overdyke, Donald F. Jr., Capt., 808 Ratcliff St., Shreveport.
Ramos, Trinidad M., Capt., 4521 Iberville St., New Orleans.
Richardson, Orville J., Major, Manifest.
Rivenbark, William C., Major, 2801 St. Charles, New Orleans.
Sampognaro, Vincent J., Capt., 502 Bres St., Monroe.
Samson, Martin F., Capt., Charity Hospital, New Orleans.
Soniat, Theodore L. L., Major, 2436 Calhoun St., New Orleans.
Strug, Lawrence H., Lt. Col., 2617 Joseph St., New Orleans.
Tannehill, Theodore L., Capt., Urania.
Tardo, Cosmo J., Capt., 911 Conti St., New Orleans.
Thomas, Edward P., Major, 1331 Philip St., New Orleans.
Whitaker, Joseph R., Capt., St. Joseph.

Maine

Crane, Lawrence, Capt., Rockland.
Lawrey, Oran R. J., Major, Eastland Hotel, Portland.
Metcalf, John T., Major, Water St., Lubec.
Soule, Gilmore W., Capt., 80 Broad St., Rockland.
Spear, William, Capt., 300 Main St., Lewiston.
Vachon, Robert D., Capt., 50 Winter St., Sanford.

Maryland

Allen, William K., Capt., Provident Hosp., Baltimore.
Anderson, Andrew R., Major, 700 Cathedral St., Baltimore.
Andrews, Robert M., 1st Lt., 9601 Colesville Rd., Silver Spring.
Byerly, Marshall P., Major, 3232 Carlisle Ave., Baltimore.
Debuskey, Mathew, Major, 2436 Lakeview Ave., Baltimore.
Gillis, Marion H. Jr., Lt. Col., 405 Bush St., Salisbury.
Jones, Howard W. Jr., Capt., 325 Hawthorne Rd., Baltimore.
Levin, Milton, Capt., 2224 Eutaw Pl., Baltimore.
Lieberman, Alfred T., Capt., % Filtzer, 2216 Park, Baltimore.
Lumpkin, William R., 1st Lt., 2602 Guilford Ave., Baltimore.
Miceli, Joseph, Capt., 451 E. 28th St., Baltimore.
Nolan, James J., Capt., 608 Frederick Rd., Catonsville.
O'Loughlin, R. K., Capt., 21 Sherman Ave., Takoma Park.
Ozazewski, John C., Capt., 1930 Eastern Ave., Baltimore.
Proctor, Samuel E., Lt. Col., 113 Deepdene Rd., Baltimore.
Sardo, Robert S., Capt., Clarksville.
Schneider, Meyer M., Capt., U. of Md. Hosp., Baltimore.
Singewald, Martin L., Lt. Col., 1520 N. Broadway, Baltimore.
Tankin, Louis H., Capt., 4014 Woodhaven Ave., Baltimore.
Van Ormer, W. A., Capt., 101 Washington St., Cumberland
Weintraub, Harry, Capt., 1730 E. Fayette St., Baltimore.
Woodward, Theodore E., Major, 1 Park Ave., Westminster.

Massachusetts

Abramson, Julius, Lt. Col., 138 Algonquin Rd., Newton.
Albright, Hollis L., Major, 990 Center St., Newton Center.
Alexander, Eben Jr., Capt., 300 Longwood Ave., Boston.
Allan, Malcolm S., Capt., 19 Brown St., Palmer.
Allen, Eugene E., Major, 4 Congress St., Milford.
Allen, Henry F., 1st Lt., 200 Beacon St., Boston.
Allen, Timothy E., Major, 62 Freeman St., Arlington.
Ames, Melvin F., Capt., 58 High St., Newburyport.
Amiral, Hiram H., Major, Turnpike Rd., Southboro.
Barbour, Charles M. Jr., Capt., 125 Nehoiden Rd., Waban
Brugsch, Heinrich G., Capt., 6 Spinney Ter., Belmont.
Clifford, William J., Capt., 6 Myrtle St., Milford.
Cogswell, Thomas G., Major, City Hosp., Worcester.
Colantino, George J., Capt., 490 Highland Ave., Malden.
Cooke, Richard C., Major, Metropolitan State Hosp., Waltham.
Cotter, Joseph R., Lt. Col., 3 Wallace Ct., Charleston.
Crane, Chilton, Major, Richmond.
Croskery, William F., Major, 261 Reedsdale Rd., Milton.
Desmet, George W., Capt., 27 Belmont, North Andover.
Donaghy, Raymond M. P., Capt., Mass. Gen. Hosp., Boston.
Elkin, Milton, Capt., 16 Pasadena Rd., Dorchester.
Fleck, Stephen, Capt., 330 Brookline Ave., Boston.
Hagopian, Norman, Capt., 5 Linden St., Worcester.
Hastings, N., Capt., 16 Emerson St., Brookline.
Hawkes, Stanley W., Major, 290 Main St., Saugus.
Inserra, Frank, Capt., 12 Mason St., Medford.
Jacobs, Nathan, Capt., 211 Main St., Fisherville.

PHYSICIANS SEPARATED FROM SERVICE

Massachusetts—Continued

James, David F., Capt., 721 Huntington Ave., Boston.
Jaques, William E., Capt., 25 High Rd., Newbury.
Joress, Mark H., Major, 79 Nahant St., Lynn.
Kowalski, Stephen F., Capt., 343 Washington St., Haverhill.
Mack, Ernest W., Major, 270 Brookline Ave., Boston.
Marcus, Phillip S., Capt., 42 Linnaean St., Cambridge.
Mollomo, Joseph F., Major, 18 Arcadia St., Dorchester.
Nahigian, Russell, Capt., 11 Myrtle St., Springfield.
Neber, Jacob, 1st Lt., 40 Miller Rd., Newton.
Olans, Sidney, Major, 57 College Ave., Somerville.
Peabody, Stephen D., Capt., 266 High St., Newburyport.
Prather, George C., Major, 11 Oakcliff Rd., Wellesley Hills.
Radcliffe, Frederick R., Lt. Col., 60 Eastland Ter., Haverhill.
Ravreby, Louis, Capt., Norfolk Co. Hosp., South Braintree.
Reynolds George S., Lt. Col., 593 Holmes Rd., Pittsfield.
Seidenberg, Daniel, Capt., 12 Pleasant St., Spencer.
Shapiro, Robert, Capt., 39 Brunswick St., Roxbury.
Sharp, Morris L., Major, Foxboro State Hosp., Foxboro.
Shaw, Jules H., Major, 1396 Commonwealth Ave., Brighton.
Snedeker, Lendon, Lt. Col., 30 Dudley St., Brookline.
Spring, George V., Capt., East Pepperell.
Stanley, Howard W., Major, 119 Belmont St., Worcester.
Warthin, Thomas A., Lt. Col., 226 Marlborough St., Boston.
Wegner, Walter R., Major, Woodridge Rd., Wellesley.
Weiser, Albert, Capt., 1059 Pleasant St, Fall River.
Whalen, Kearons J., Capt., 49 Charles St., Pittsfield.
Wiener, Harry J., Capt., 51 Nahant Ave., Revere.
Wiseblatt, Aaron C., Capt., 16 Columbia Rd., Dorchester.
Wyatt, George M., Capt., 108 Griggs Rd., Brookline.
Yemm, Warren A., Capt., 15 Boylston Rd., Newton Highlands.

Michigan

Acocks, James R., Capt., Copper County Sanatorium, Houghton.
Beebe, Irvin J., Major, Main St., Morenci.
Block, Malcolm, Capt., 716 Catherine St., Ann Arbor.
Christie, Joseph W., Lt. Col., 5601 Hatchery Rd., Pontiac.
Christophersen, James W., Capt., 1075 W. Forest, Muskegon.
Courville, Charles J., Major, 1621 Burlingame, Detroit.
Crane, Thomas P., Major, 22356 Edison Ave., Dearborn.
Croll, Leo J., Major, 18605 Fairfield, Detroit.
Daugharty, Robert V., Capt., 209 S. Shelby St., Cadillac.
Finnie, Raymond G., Major, 304 S. Jefferson St., Hastings.
Fisher, Joseph V., Capt., 220 Madison St., Chelsea.
Fleishman, Norman A., Capt., 1094 Jefferson St., Muskegon.
Foerster, F. E., Capt., 1402 Washington Heights, Ann Arbor.
Foust, Earl W., Capt., 624 S. Gainsboro, Royal Oak.
Graubner, Franklin L., Capt., Marshall.
Gutterman, Meyer A., Capt., 2987 Leslie Ave., Detroit.
Imthun, Edgar F., Capt., 113 E. Jefferson, Grand Lodge.
Irwin, William D., Capt., 2333 Sheffield Dr., Kalamazoo.
Jacoby, Abraham H., Major, 314 Green Ave., Bay City.
Lapides, Jack, 1st Lt., University Hosp., Ann Arbor.
Levagood, Floyd B., Capt., 16231 Greenlawn, Detroit.
Little, Samuel C., Major, University Hospital, Ann Arbor.
McNicholas, John R., Capt., Marenisco.
McQuiggan, Paul F., Major, 1134 Bishop Rd., Grosse Pointe.
McVay, C. B., Capt., 4510 E. Huron River Dr., Ann Arbor.
Medvezky, Michael J., Major, 1813 22nd St., Bay City.
Mills, Clinton C., Major, 4212 Glendale Ave., Detroit.
Morrison, Donald B., Major, Tekonsha.
Neill, Edwin J., Capt., 733 Lincoln Blvd., Lincoln Park.
Norgaard, Hal V., Major, Marlette.
Okun, Milton H., Capt., 838 W. Cedar St., Kalamazoo.
Payton, Charles F., Capt., 248 N. Bates, Birmingham.
Peggs, George F., Capt., 5419 Livernois Ave., Detroit.
Podezwa, J. W., Capt., 1297 Lochmoor, Grosse Pointe Woods.
Retallack, Russell C., Capt., 621 Genesee St., Iron River.
Rey, George E., Capt., 870 Burlingame, Detroit.
Schultz, Frank R., Capt., 925 Tuscola St., Saginaw.
Sugarman, Marcus H., Major, 2261 W. Philadelphia, Detroit.
Vanderzalm, T. P., Lt. Col., Vet. Admin. Center, Dearborn.
Vivirski, Edward E., Capt., 603 S. Elm Ave., Jackson.
Wellard, Henry C., Major, 8530 Medbury Ave., Detroit.
Wietersen, Fred K., Major, 10025 Elgin, Huntington Woods.
Wunsch, R. E., Capt., 646 Washington Rd., Grosse Pointe.
Zukowski, S. A., Capt., 7062 Duncan, Detroit.

Minnesota

Anderson, David M., 1st Lt., 406 Walnut St., Minneapolis.
Chunn, Stanley S., Capt., Pipestone.
Coddon, Walter D., Major, 992 Laurel Ave., St. Paul.
Conant, Robert F., Capt., 713 N. 6th St., Brainerd.
Erickson, Reuben F., Lt. Col., 4638 Edgebrook Pl., Minneapolis.

Minnesota—Continued

Grogan, John M., Capt., Wadena.
Hagen, Paul S., Major, 816 Woodland Ave., Crookston.
Ingalls, Edgar G. Jr., Capt., 1720 W. 31st St., Minneapolis.
Ingebrigtson, Ernest K., Capt., 514 9th St. S., Moorhead.
Irons, *William E., Capt., Mayo Clinic, Rochester.*
Johnson, Emil W., Capt., 3541 Portland Ave., Minneapolis.
Lien, Richard J., Major, 516 5th St., S.W., Rochester.
Mason, James A., Major, 804 4th St., International Falls.
Mead, Louis C., Major, U. S. Vet. Facility, Minneapolis.
Mooney, Robert D., Major, 418 Beacon Ave., St. Paul.
O'Connor, William B., Capt., 1163 Hague Ave., St. Paul.
Quattlebaum, Frank W., Capt., 117½ 12th Ave., Rochester.
Richardson, Frederick S., Lt. Col., 3421 Park Ave., Minneapolis.
Smith, Frederick A., Major, 417 9th Ave., S.W., Rochester.
Stebbins, T. L., Major, 1931 S. Dupont Ave., Minneapolis.
Stevenson, Walter D. Jr., Major, Mayo Clinic, Rochester.
Tenner, Robert J., Major, Mayo Clinic, Rochester.
Titrud, Leonard A., Major, 2410 Butler Pl., Minneapolis.
Van Valkenburgh, John D., 1st Lt., Floodwood.
Walsh, Francis M., Capt., 246 Bedford St., Minneapolis.
White, Raleigh R., Capt., 1406 1st St., S.W., Rochester.
Woodruff, Robert, Lt. Col., Mayo Clinic, Rochester.

Mississippi

Austin, Jessie W., Capt., Forest.
Baines, Thomas A., Lt. Col., 903 N. State St., Jackson.
Dabbs, Rome T., Capt., Aberdeen.
Eddleman, Thomas S., Lt. Col., 710 Grand Ave., Yazoo City.
Garner, Byron O., Capt., Pontotoc.
Garrison, Harvey F. Jr., Major, 748 Gillespie St., Jackson.
Mason, George S., Major, Lumberton.
McKell, Thomas E., Major, Sanatorium.
Parker, William H., Major, 524 Poplar Ave., Philadelphia.
Powell, Frank M. Jr., Capt., 206 S. Church St., Tupelo.
Robertson, Milton H., 1st Lt., 1322 Jackson St., Corinth.
Smith, Robert W., Col., 103 E. Peace St., Canton.
Synnott, James D., 1st Lt., Route 3, Eupora.
Thompson, Charles C. Jr., Major, Columbia.

Missouri

Aylward, Howard J., Capt., St. Louis County Hosp., Clayton.
Carlson, Hjalmar E., Capt., 1745 Swatzel Rd., Kansas City.
Casey, Edwin J., Capt., 6063 Kingsbury Blvd., St. Louis.
Cofer, James C., Major, Kennett.
Deutch, Max, Major, 5108 Maple Ave., St. Louis.
Drisko, Robert M., 1st Lt., 4133 Highland Ave., Kansas City.
Ellis, Samuel T. Jr., 1st Lt., 1302 Benton, Kansas City.
Ferguson, J. T. Jr., Major, 601 E. Armour Blvd., Kansas City.
Ferguson, Lewis H., Major, St. John's Hosp., St. Louis.
Gray, William H., Capt., 2 Hawbrook Lane, Kirkwood.
Gregory, K. D., Major, City Hosp., 1515 LaFayette, St. Louis,
Heller, Bernard M., Major, 6404 McGee St., Kansas City.
Isbell, Charles H. Jr., Capt., 1046 S. Garrison, Carthage.
Jolly, Benjamin N., Major, State Hosp. 3, Nevada.
Jones, James B., Capt., 1400 Pine St., Rolla.
Jordan, Edward J., Major, 3246 N. Delor St., St. Louis.
Kinder, James A. Jr., 1st Lt., 102a N. Ellis, Cape Girardeau.
Lentz, Harold C., Major, 214 S. Wood St., Neosho.
Littmann, Lewis E., Major, 11 Lake Forest, Richmond Heights.
McQuitty, James T., Capt., Blairstown.
Mills, Charles W. Jr., Capt., 630 S. Kingshighway, St. Louis.
Reich, Harry A., Capt., 5701 Lindenwood, St. Louis.
Reynolds, Garland A., Major, 1236 Normal, Cape Girardeau.
Schlicht, Sherman E., Capt., Niangua.
Schulein, Vernon E., Capt., 1387 Burd Ave., St. Louis.
Senturia, Ben D., Capt., 7017A Amhurst Ave., University City.
Stolar, Jacob, Capt., 4931 Laclede, St. Louis.
Stricker, Eamil A., Major, St. James.
Underwood, Johnson Jr., Capt., Parksville.
Young, John H., Major, Galena.

Montana

Lockridge, Thaddeus L., Capt., Whitefish.
Teel, Harold M., Major, Polson.

Nebraska

Ayers, LeRoy J., Capt., 3208 Harney St., Omaha.
Bartholomew, Philip H., Lt. Col., 3345 S. 30th St., Lincoln.
Dowell, Dawson A., Major, 4321 Poppleton, Omaha.
Lauvetz, Frank R., Capt., Wahoo.
Murphy, Albert V., Major, 9900 Florence Hts. Blvd., Omaha.
Niemeyer, Arnold C., Major, Dewitt.
Palmer, Robert B., Major, 1016 Sharp Bldg., Lincoln.

PHYSICIANS SEPARATED FROM SERVICE

Nevada

Anderson, Frederick M., Lt. Col., 204 Minnesota, Carson City.
Eklund, Roy N., Capt., *General Delivery, Overton.*
Winikow, William E., Capt., U. S. Veterans Hospital, Reno.

New Hampshire

Birnbaum, Leo, Major, 56 School St., Lebanon.
Chase, Walter E., Capt., Rumney.
Jacques, Leo C., Capt., 178 High St., Somersworth.
Sheehan, John F., Major, 387 E. High St., Manchester.
Wiemers, Eugene L., Major, 105 Pleasant St., Concord.

New Jersey

Abers, Bernard D., Capt., 574 Summit Ave., Jersey City.
Abramson, Solomon, Capt., 1181 Jaques Ave., Rahway.
Adams, Gerald, Capt., 135 Eastern Parkway, Brooklyn.
Adler, Harold L., Capt., 976 Fox St., New York.
Alonzo, Gerard J., Major, 615 Stuyvesant Ave., Lyndhurst.
Angelillis, Paul, Capt., 76 State St., Hackensack.
Arbeit, Sidney R., Capt., 56 Gifford Ave., Jersey City.
Bahnson, Conrad M., Capt., 170 Bowers St., Jersey City.
Barone, Leo J., Capt., 108 Surie Ave., Clifton.
Berger, Harold R., Capt., 463 E. Jersey St., Elizabeth.
Bernstein, Benedict J., Capt., 928 W. Front St., Plainfield.
Black, Benjamin S., Lt. Col., 450 Avenue A., Rochester.
Boyd, Robert P., Capt., 120 Martine Ave., Fanwood.
Buffey, Walter H., Capt., 19 Oakwood Pl., Elizabeth.
Calvert, William C., Capt., 225 Gregory Ave., West Orange.
Cohen, Sidney P., Capt., 512 Franklin Avenue, Nutley.
Cohen, William, Major, 1007 Greenwood Avenue, Trenton.
Davidson, Henry A., Major, 31 Lincoln Park, Newark.
Dein, Irving O., Capt., 4 S. Plaza Pl., Atlantic City.
D'Elia, William J., Major, 394 2nd St., Jersey City.
De Michele, Roland V., Lt. Col., 103 N. 10th St., Newark.
Deutel, Oscar R., Capt., 276 Franklin St., Bloomfield.
Di Giacomo, William H., Capt., 223 Fairmont Ave., Newark.
Fader, Ferdinand, Capt., 3 S. Grove St., East Orange.
Farb, Harry H., Capt., 121 Lyons Avenue, Newark.
Fay, Vincent G., Lt. Col., 109 N. 4th St., Harrison.
Finnegan, William R. Jr., Capt., 265 Handy, New Brunswick.
Fischer, David D., Capt., 356 Milburn Ave., Milburn.
Gelman, Sidney, Capt., 600 E. 27th St., Paterson.
Gerne, Timothy A., Capt., 972 Summit Ave., Jersey City.
Gitterman, David A., Capt., 519 Engle St., Englewood.
Grant, William E., Capt., 1370 Morris Ave., Union.
Grimes, Robert R., Capt., 480 Sagamore Avenue, Teaneck.
Haley, Paul W., Capt., 719 Sanford Avenue, Newark.
Hartman, Winfield L., Major, 2 Elm Ct., South Orange.
Hoffman, Charles W., Capt., 226 David St., South Amboy.
Horowitz, Alexander S., Capt., 463 Jersey Ave., Jersey City.
Kissinger, Donald J., Capt., 150 E. Madison, Dumont.
Klein, Michael M., Major, 210 Conklin Ave., Hillside.
Koenig, Albert S. Jr., Capt., 382 Turrell Ave., South Orange.
Kondor, Joseph S., Capt., 978 S. Broad St., Trenton.
Krichbaum, Carroll E., Lt. Col., 63 Myrtle Ave., Montclair.
Landon, Hyman R., Capt., 105-05 69th Ave., Forest Hills.
Lapin, Samuel B., Capt., 628 W. State St., Trenton.
Laurusonis, John J., Capt., 300 W. Buck St., Paulsboro.
Lehman, David J. Jr., Major, 2 Highwood Road, West Orange.
Lemmon, Junius M., Capt., 137 Belvidere Ave., Washington.
Liva, Giusto A., Capt., Wyckoff Ave., Wyckoff.
Lynn, Hugh B., Capt., 27 Westview Road, Verona.
Mackin, John J., Capt., 596 Bergen Ave., Jersey City.
Maffeo, Carl E., Major, 137 Adams St., Newark.
Manno, Peter D., Capt., 81 W. 25th St., Bayonne.
Meinhard, Fred, Major, 154 Van Buren St., Newark.
Milanesi, Armand M., Major, 208 44th St., Union City.
Moon, *Dabney von Knobloch*, Major, 138 E. 7th St., Plainfield.
Morrow, Charles S., Major, 321 S. 9th St., Newark.
Naclerio, Amedeo C., 1st Lt., N. J. State Hospital, Greystone Park.
Nadel, Charles I., Capt., *1186 Clinton* Ave., Irvington.
O'Shea, John J., Capt., 2200 Palisade Ave., Weehawken.
Pearlman, Saul J., Lt. Col., 210 *Lexington* Ave., *Passaic.*
Perrotta, Anthony J., Major, 94 Maple Avenue, Red Bank.
Petinga, Thomas J., Capt., 110 S. *Georgia, Atlantic City.*
Pink, Solomon H., Capt., 252 Highland Avenue, Passaic.
Polisar, Ira A., Major, Holy Name Hosp., Teaneck.
Rampona, Joseph M., Major, 272 Nassau St., Princeton.
Randall, George E., Capt., 10-02 River *Road, Fair Lawn.*
Rathauser, Frank, Capt., 25 Bryn Mawr, Trenton.
Ristine, Edwin R., Lt. Col., 123 Maple Avenue, Westville.
Rosenbaum, Samuel, 1st Lt., 20 Erwin Place, West Orange.
Rosenthal, Abraham, Capt., 43 3d Ave., Atlantic Highlands.

New Jersey—*Continued*

Rubin, William, Capt., 419 George St., New Brunswick.
Russomanno, Paul J., Capt., *212 Clifton* Avenue, Newark.
Ruttenberg, Louis, Capt., 19 Hopkins St., Woodbury.
Salmeri, Edward J., Major, 500 Marlboro Rd, Wood-Ridge.
Samuel, Jerome H., Capt., 31 Lincoln Park, Newark.
Sandler, Samuel A., Lt. Col., 1166 Laurelton Parkway, Teaneck.
Santangelo, Emil L., Capt., *313 18th Ave., Paterson.*
Saxe, David H., Major, 100 High St., Passaic.
Sena, Frank W., Capt., 18 Isabella Avenue, Newark.
Smith, Meyer, Capt., 14 Webster Ave., Jersey City.
Sorett, Joseph, Capt., 365 S. Burnet St., East Orange.
Tachau, Hans A., Capt., E. Main St., Prattsburg.
Teichholz, Max H., Capt., 164 Hamilton Ave., Passaic.
Wacker, William F., Capt., 1224 Salem Ave., Hillside.
Walsh, Thomas J., Lt. Col., 514 Greenwood Ave., Trenton.
Wise, John S., Capt., 73 Westcott Road, Princeton.
Yerg, Raymond A., Capt., 51 Grandview Pl., Upper Montclair.
Zirpolo, Gene A. V., 1st Lt., 449 W. Grand Ave., Rahway.
Zucker, Isadore, Major, 635 High St., Newark.

New Mexico

Anthony, William D., Capt., 700 S. Strong, Gallup.
Womack, Carrol L., Major, 701-3 N. Canal St., Carlsbad.

New York

Alberti, Vincent S., Major, *212* E. 15th St., New York.
Altieri, Anthony J., Capt., 2472 Grand Ave., New York.
Amazon, Peter, Capt., 919 Park Place, Brooklyn.
Anderson, Orrin E., Major, Terrace Lodge, Clifton Springs.
Anhalt, James E., Major, Peck Memorial Hospital, Brooklyn.
Aquillino, Armand U., Major, 142 Harwood Ave., Syracuse.
Argentieri, Daniel D., Capt., 416 Bainbridge St., Brooklyn.
August, Stanley, Capt., 1691 E. 15th St., Brooklyn.
Ayer, Guy D. Jr., Major, 13 River St., Cooperstown.
Battista, Louis C., Capt., 301 Washington St., Watertown.
Baum, George L., Capt., 625 Montgomery St., Brooklyn.
Behm, Karl H., Capt., 54 Butler St., Westbury.
Benny, John M., Capt., 135 Parks St., Buffalo.
Bereston, Eugene S., Major, Montefiore Hospital, New York.
Berg, Harry E., Capt., 2250 Clarendon Rd., Brooklyn.
Berger, *Murray M., Major, 300 Central Park West, New York.*
Berke, Rudolph, Capt., 831 Gerard Ave., Bronx.
Berkovsky, Max, Capt., 955 Walton Ave., New York.
Beswick, William F., Lt. Col., 400 Elmwood Ave., Buffalo.
Bieber, Irving, Capt., 104 Mowbray Pl., Kew Gardens.
Bishop, Louis F. Jr., Lt. Col., 139 E. 79th St., New York.
Black, Everett O., Major, Fredonia.
Block, David E., Capt., Madalin.
Bloom, Morris J., 1st Lt., 176-28 69th Ave., Flushing, L. I.
Bloom, William, Capt., 460 56th St., Brooklyn.
Bock, Raymond F., Capt., 1621 Nelson Ave., Bronx.
Bohrer, Charles D., Major, 116 E. 58th St., New York.
Boleman, Austin P. Jr., Capt., *1236 Virginia* Ave., Bronx.
Bonner, Harold C., Capt., RFD 2, Ovid.
Bottalico, Michael A., Capt., 1931 Haviland Ave., Bronx.
Brahms, Max, Capt., 135 Clarkson Ave., Brooklyn.
Breen, Victor M., Major, 326 Edison St., Buffalo.
Breuder, Andrew B., Major, 200 Sterling St., Brooklyn.
Brody, Michael S., Capt., 925 Ocean Ave., Brooklyn.
Brooks, *Louis*, Capt., *2745* Reservoir Ave., *Bronx.*
Bugden, Walter F., Major, Saranac Inn P. O.
Burke, William F., Capt., *160 Middleneck Road, Great* Neck.
Burstein, Jacob, Capt., 24 Kane St., Buffalo.
Buttitta, Richard I., Capt., *160* E. 89th St., New York.
Cagan, Aaron, Capt., *278* Crescent St., Brooklyn.
Caravetta, Domenick, Lt. Col., *3042* Grand Concourse, Bronx.
Carroll, Charles T., Major, % Commander V. Carroll, USN, 145 95th St., Brooklyn.
Ceravolo, Raphael J., Major, *7316'14th* Avenue, Brooklyn.
Chapman, Ralph R., Capt., *806* Elmwood Ave., Buffalo.
Chieffo, Henry, 1st Lt., 311 Henry St., New York.
Chronis, Leonidas M., Capt., 2215 S. Geddes St., Syracuse.
Collins, Edward F., Capt., *742* E. 9th St., Brooklyn.
Colucci, David D., Major, 48 Wilmer St., Rochester.
Commins, Saul, Capt., 42 Rosedale St., Rochester.
Conti, James P., Capt., 23 Sylvan Road, Rochester.
Cooper, George M., Major, 2961 Bailey Ave., Buffalo.
Couper, John L., Capt., St. Luke's Hospital, New York.
Daly, Joseph P., Major, *30-31* 43rd St., Long Island City.
Davidson, Chester L., Lt. Col., 88-20 146th St., Jamaica.
Davis, Donald A., Major, 237 E. 20th St., New York.
Davis, Joseph, Major, 1001 Jerome Ave., New York.
De Gaetano, L. F., Capt., *4616 Ft. Hamilton* Pkwy., Brookl

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

Diasio, Joseph S., Major, 170 E. 94th St., New York.
Diaso, Herbert R., Lt. Col., Onondaga Sanatorium, Syracuse.
Disick, Solomon, Major, 409 Avenue O, Brooklyn.
Dorfmann, Henry L., Capt., 219 E. 12th St., New York.
Dresdale, David T., Capt., 722 W. 168th St., New York.
Dunigan, Jay T., Capt., 98 Willett St., Albany.
Eckmann, Leonard M., Capt., 21 Amberson Ave., Yonkers.
Ehrlich, Jacob W., Lt. Col., 23 Blackthorn Lane, White Plains.
Eichna, Ludwig W., Major, 27 E. 38th St., New York.
Elkind, Mortimer M., Lieut. Col., 634 Empire Blvd., Brooklyn.
Endreny, Emil, Lt. Col., 434 Pelhamdale Ave., Pelham Manor.
Enklewitz, Morris, Capt., 80 E. 210 St., New York.
Feiman, Morris S., Capt., 1585 E. 14th St., Brooklyn.
Feingold, Joseph, Major, 30 East St., Fort Edward.
Fettes, David S., Capt., 325 Highland Blvd., Brooklyn.
Finkel, Milton M., Major, 2610 Glenwood Rd., Brooklyn.
Firestone, Siegfried D., Capt., 579 Oliver St., North Tonawanda.
Fisher, Milton S., Capt., 1495 Madison Ave., New York.
Fox, William, Major, 7920 20th Avenue, Brooklyn.
Franco, Alexander, Capt., 37-14 21st Ave., Long Island City.
Franklin, Murray, Major, 505 Hopkinson Avenue, Brooklyn.
Friedman, Eliot M., Capt., 1434 Genesee St., Utica.
Furlong, Maurice B., Capt., 59 Strathmore, Buffalo.
Gajewski, Matt A., Major, 184 Strauss St., Buffalo.
Garity, Charles J., Capt., 3763 63rd St., Woodside.
Geiger, Ferdinand, Capt., 233 Dewitt St., Syracuse.
Giacini, Angelo C., Capt., 47-01 50th Ave., Woodside.
Giardina, Anthony L., Major, 362 Avenue T, Brooklyn.
Glass, Burt A., Capt., 65 Central Park, West, New York.
Gold, Edwin M., Major, 1901 Avenue N, Brooklyn.
Goldberg, Philip, Capt., 661 Barbey St., Brooklyn.
Goldman, Alexander B., Capt., 111 Van Buren St., Brooklyn.
Goldman, Herbert B., Major, 568 E. 91st St., Brooklyn.
Goldsmith, Herbert S., Capt., 2270 Bathgate Avenue, New York.
Green, Frank M., Major, 912 Cornaga Avenue, Far Rockaway.
Greenfeld, Carl, Capt., 200 Varick St., New York.
Groopman, Samuel F., Major, 29 Fifth Avenue, New York.
Gross, Sidney W., Major, 8 E. 83rd St., New York.
Gross, Stanley, Major, 1574 57th St., Brooklyn.
Halperin, Nathaniel P., Major, 10 Post Ave., New York.
Hanley, Edward P., Capt., 78 Kent St., Albany.
Haskell, Harold G., Major, Firland Farms, Sand Lake.
Head, Joseph A., Major, 314 Waverly Avenue, Syracuse.
Heffer, Ernest T., Major, 395 Ocean Ave., Brooklyn.
Herzog, Henry J., 1st Lt., 217 E. Avenue, Lockport.
Hetzer, Arthur M., Capt., 3241 Perry Avenue, Bronx.
Hewett, Joseph W., 1st Lt., 874 W. Ferry St., Buffalo.
Himelstein, Theodore K., Capt., 588 West End Ave., New York.
Hirsch, Lucien, Capt., 303 Woodbine St., Brooklyn.
Hirst, Henry S., Major, 244 South St., Mechanicville.
Hodges, Richard G., Capt., 96 Haven Avenue, New York.
Holman, Cranston W., Col., 131 E. 66th St., New York.
Holzer, Harry, Capt., 166 E. 82d St., New York.
Irvine, Vernon K., Capt., 3 N. Maple St., Granville.
Jacobs, Benjamin, Capt., 927 Eastern Blvd., Bronx.
Jacobson, Samuel A., Major, 730 Grand Concourse, New York.
Jellinek, Harold L., Capt., 605 W. 170th St., New York.
Kallos, Andrew, Capt., 330 E. 71st St., New York.
Kannengeiser, John J., Major, 195 Euclid Ave., Brooklyn.
Karger, Abraham, Capt., 3215 Netherlands Ave., Bronx.
Kennedy, Robert P., Capt., Knollwood Dr., RFD 1, Rochester.
King, Walter G., Capt., 67 Bennett Ave., Binghamton.
Kingsbury, Clifford A., Capt., Ballston Spa, New York.
Kinne, Edmund R., Capt., 10 Benton Ave., Middletown.
Klein, Abraham, Capt., 735 Empire Blvd., Brooklyn.
Klemann, Gilbert L., Major, 30 Davis Avenue, New Rochelle.
Knitzer, Carl, Capt., 5616 Twelfth Avenue, Brooklyn.
Kramer, Milton, 1st Lt., 39 Auburn Place, Brooklyn.
Kutzman, Nathaniel, Major, 73 Richmond Avenue, Buffalo.
Lambert, Benjamin H., Capt., 1515 Grand Concourse, Bronx.
Langsam, Abraham A., Capt., 182 New York Ave., Brooklyn.
Langsam, David, Major, 2727 Bedford Ave., Brooklyn.
Laquidara, Aurelius A., Capt., 689 2d Ave., Troy.
Leibenhaut, Milton, Major, 1134 St. Johns Place, Brooklyn.
Leventhal, Harry, Capt., 1842 Bryant Avenue, Bronx.
Levine, Herman M., Capt., 2703 Webb Avenue, Bronx.
Levine, Jack, Capt., 200 New York Ave., Brooklyn.
Lewin, Albert L., Capt., 329 Park Avenue, Medina.
Loeb, Harry, Capt., 1416 Ditmas Ave., Brooklyn.
Loebman, David L., Capt., 945 Hoe Ave., Bronx.
Lord, William J., Capt., 559 Park Avenue, Albany.
Luger, Daniel, Capt., 27 E. 94th St., New York.
Maar, Henry R., Capt., 3401 Kingsbridge Ave., New York.

New York—Continued

Mahoney, Daniel P., Capt., 3126 6th Avenue, Troy.
Marshall, Adrian, Capt., 300 Ocean Parkway, Brooklyn.
Meltzer, Philip J., Capt., 194-18 117 Road, St. Albans.
Menter, Philip, Capt., 927 Ackerman Avenue, Syracuse.
Menza, Michael J., Capt., 106 10th St., Buffalo.
Michaels, William J. Jr., Major, 714 Hamilton St., Syracuse.
Milberg, Max B., Capt., 1078 52nd St., Brooklyn.
Mrozek, Emil C., Major, 265 Main St., Binghamton.
Mulholland, John H., Lt. Col., Beechdale Rd., Dobbs Ferry.
Murphy, Joseph P., Capt., 1 Dogwood Dr., Kings Pt., Gt. Neck.
Nadler, Julius, Major, 1526 E. 4th St., Brooklyn.
Nash, Marcus, Major, 1335 Morris Ave., New York.
Neill, Charles L. Jr., Major, 447 E. 65th St., New York.
Newcomb, William F., Capt., 67 N. Main St., Homer.
Newell, Robert B., Major, 285 Kenmore Ave., Kenmore.
Nightingale, Louis M., Major, 71 Ocean Parkway, Brooklyn.
Niles, Charles E., Lt. Col., Station B. Poughkeepsie.
Nixon, Samuel P., Capt., Fairport.
Oakes, Alden B., Lt. Col., Greenpoint Hosp., Brooklyn.
Occhino, Nicholas R., Capt., 351 Floral Avenue, Johnson City.
Paprocki, Theodore F., Capt., 19 Mowbray Ave., Bay Shore.
Perlstein, Jacob, Capt., 225 Beaumont St., Brooklyn.
Pfeifer, Jacob J., Capt., 914 Bay Ridge Parkway, Brooklyn.
Pisani, Joseph M., Capt., 2 Oliver St., New York.
Powers, John J., 1st Lt., 334 Hamilton St., Albany.
Rader, Milton J., Capt., 3302 Avenue N, Brooklyn.
Raifman, Herman M., Capt., 1814 66th St., Brooklyn.
Rakov, Philip H., Capt., 318 Scott Ave., Syracuse.
Reich, George A., Capt., 2324 Barcelona Rd., Schenectady.
Reifer, Paul, Capt., 555 Crown St., Brooklyn.
Resnick, Benjamin, Capt., 546 Colonial Avenue, Pelham Manor.
Richard, Donat R., 1st Lt., 100 E. 38th St., Brooklyn.
Richards, Maxwell C., Capt., 2016 Regent Place, Brooklyn.
Ritchie, Saul, Lt. Col., 361 Broadway, Kingston.
Robbins, Joseph V., 1st Lt., 111 E. Main St., Port Jervis.
Roberts, William G., Major, 40 Chestnut Avenue, Dansville.
Robin, Percival A., Major, 131 Fulton Avenue, Hempstead.
Rock, Joseph, Capt., 17 Vienna St., Rochester.
Rosen, Bernard, Capt., Box 127, Lake Mohegan.
Rosenberg, Carl C., Capt., 2047 Nostrand Avenue, Brooklyn.
Rosenthal, Benjamin, Capt., 2111 Albemarle Road, Brooklyn.
Ross, Nathan E., Capt., 28-30 34th St., Long Island City.
Rubin, Abraham, Major, 1190 Shakespeare Avenue, Bronx.
Rubinson, Helman J., Capt., 556 Westmoreland Ave., Syracuse.
Rudick, Morris D., 1st Lt., 43-09 47th Avenue, Long Island City.
Rudoy, Martin, Capt., 174 Woodruff Avenue, Brooklyn.
Ruggiero, Wilfred F., Major, 26 Temple Court, Brooklyn.
Rush, Martin R., Capt., 1454 Ocean Avenue, Brooklyn.
Sack, Samuel S., Lt. Col., 1303 122nd St., College Point.
Savoia, Domenico A., Capt., 115-05 114th Avenue, Ozone Park.
Sayet, Maxwell M., Capt., 1166 Grand Concourse, New York.
Schott, Jacob, Capt., 612 Argyle Road, Brooklyn.
Seaman, George J., Capt., 163 Ocean Avenue, Brooklyn.
Severance, Fayette D., Major, 39 Court St., Canton.
Sherry, Solomon, Capt., 1331 Franklin Ave., Bronx.
Siegel, Irving M., Capt., 35 E. 9th St., New York.
Simon, Milton, Capt., 9355 71 Drive, Forest Hills.
Sloand, Anthony S., Major, 200 Main St., Springville.
Sobel, Raymond, Major, Circular Road, Poughkeepsie.
Solomon, Nathaniel H., Capt., 62-65 Saunders St., Rego Park.
Sommers, Sidney, Capt., 2264 Creston Ave., Bronx.
Spota, George, 1st Lt., 777 Grote St., Bronx.
Stewart, Charles F., Capt., 25 Maple Dr., Great Neck.
Strauss, Joseph R., Capt., 38-05 65th St., Woodside, L. I.
Strosberg, Irving, 1st Lt., 40 Ferry St., Troy.
Suratt, Theodore P., Major, State Hospital, Central Islip.
Swersie, Allan K., Capt., 229 W. 78th St., New York.
Tarner, Arnold M., Capt., 676 Richmond Avenue, Buffalo.
Tarter, Solomon S., Capt., 124 Remsen St., Brooklyn.
Teicher, Ira, Major, 565 Fifth St., Brooklyn.
Tepper, Julius, Capt., 42-15 43rd Ave., Sunnyside, L. I.
Thwaite, Walter G., Capt., Kings Co. Hosp., Brooklyn.
Tidona, John J., Capt., 7501 17th Avenue, Brooklyn.
Towlen, Ralph M., Major, 65 Maple Avenue, Patchogue.
Vought, Robert L., Lt. Col., 601 Hotel Jamestown Bldg., Jamestown.
Wechsler, Harry F., Lt. Col., 55 E. 86th St., New York.
Weiner, Aaron A., Capt., 2084 61st St., Brooklyn.
Wexler, Nathan H., Major, 562 Alabama Avenue, Brooklyn.
Zuckerman, Hyman, Major, 788 Howard Ave., Brooklyn.
Zuckerman, Isidore C., Major, 3523 Fillmore Ave., Brooklyn.
Zugsmith, George S., 1st Lt., 210 E. 64th St., New York.
Zwerling, Morton H., 1st Lt., 64-39 98th St., Forest Hills.

PHYSICIANS SEPARATED FROM SERVICE

North Carolina

Armistead, Drury B., Capt., 302 Greene St., Greenville.
Edgerton, Glenn S., Major, 612 Mulberry St., Statesville.
Elliott, John P., Capt., Fuquay Springs.
Forth, Paul T., Capt., 1011 Lamond Ave., Durham.
Jacobs, Julian E., Major, 121 W. 7th St., Charlotte.
Jones, Thomas T., Major, 1919 Club Blvd., Durham.
Marshall, James F., Lt. Col., 645 Arbor Rd., Winston-Salem.
May, William P., Lt. Col., 310 W. 4th St., Winston-Salem.
Naumoff, Philip, Capt., 704 Independence Bldg., Charlotte.
Pearson, Arthur A., Capt., Mountain Sanatorium, Fletcher.
Peasley, Elmus D., Major, Rex Hosp., Raleigh.
Plyler, Ralph J., Major, 611 Mocksville Ave., Salisbury.
Rand, Emmett G., Lt. Col., 1520 Jarvis St., Raleigh.
Raper, James S., Capt., 133 W. 1st Ave., Lexington.
Roberts, Roy F., Lt. Col., 15 N. Kensington Rd., Asheville.
Stephenson, B. E., Lt. Col., 701 Madison St., Roanoke Rapids.
Ward, Walter E., Capt., Robersonville.
Whitaker, Donald N., Capt., Asheboro.
White, Thomas P., Col., 714 Edgehill Rd., N., Charlotte.
Whitt, Walter Fuller Jr., 1st Lt., 329 Maupin Ave., Salisbury.
Wrenn, Creighton, 1st Lt., Stewart Ave., Mooresville.

North Dakota

Currie, Kenneth P., Capt., Cando.

Ohio

Adelman, Jack A., Major, 719 Sheridan Ave., Columbus.
Alberts, Edward, Major, 3978 Warwick Ave., Cincinnati.
Allison, Robert T. Jr., Lt. Col., 69 N. Highland Ave., Akron.
Altmaier, Clovis J., Capt., 247 S. State St., Marion.
Andrus, Frederick H., Major, 291 Edgerton Ct., Akron.
Baker, Calvin L., Major, 314 W. Main St., Cridersville.
Barber, Cecil F., Major, Felicity.
Barton, Paul F., 1st Lt., 116 E. Church St., Galion.
Baumgartner, Myron R., Capt., Bolivar.
Beery, William R., Capt., 184 E. Frambes Ave., Columbus.
Betts, Thomas F., Capt., 438 Tiffin Ave., Findlay.
Beyer, Millard C., Major, 230 W. Fairlawn Blvd., Akron.
Blanton, Gerald W., Capt., State Hospital, Athens.
Briola, Patsie F., Lt. Col., 3308 W. 111th St., Cleveland.
Brown, Arthur A., Lt. Col., Box 375, Canal Fulton.
Brown, Harry G., Major, 5647 Hamilton Ave., Cincinnati.
Brown, Louis E. Jr., Lt. Col., 727 Dorchester Rd., Akron.
Brown, Stanley E., Capt., 10022 Westchester Ave., Cleveland.
Buchanan, John R., Capt., 743 Anoka Lane, Youngstown.
Bushman, John G., Capt., Avon Lake.
Canter, Joseph M., Capt., 564 Diagonal Rd., Akron.
Carlisle, Richard C., Major, 882 Ann St., Columbus.
Carmichael, Josiah C., Capt., Lutheran Hospital, Cleveland.
Carnes, James A., Capt., 515 Federal Avenue, Massillon.
Cavanaugh, Harold N., Lt. Col., 406 Benson St., Reading.
Cellar, Frank A. Jr., Capt., 2803 Gilbert Ave., Cincinnati.
Curran, Thomas R., Major, 1589 E. Main St., Columbus.
Davis, Alexander N., Major, 56 Watervliet Ave., Dayton.
Dougherty, John E., Lt. Col., 934 McKinley Ave., Canton.
Dowell, Charles H., Capt., 207 W. Main St., Carrollton.
Dowling, James R., Major, 106 11th St., N.E., Massillon.
Earley, Daniel E., Major, 5956 Belmont Ave., Cincinnati.
Elliott, Harold B., Capt., 1766 Pembrook Rd., Springfield.
Engelman, Elmer D., Capt., 81 W. 2d St., Chillicothe.
Fabing, Howard D., Major, Conner's Landing, New Richmond.
Freedman, Arthur, Capt., 410 Catherine St., Cincinnati.
Gall, Edward A., Major, 2344 Ashland Ave., Cincinnati.
George, Walter L., Major, 1860 E. 90th St., Cleveland.
Gerlinger, Theodore V., Major, 119 Dale Ave., Willard.
Goldcamp, John S., Major, 810 Dollar Bank Bldg., Youngstown.
Grubbs, William E., Capt., 421 Union Ave., Steubenville.
Hudson, Charles L., Major, 1500 Crest Rd., Cleveland Heights.
Hunter, Curwood R., Capt., 1979 Dalewood Pl., Cincinnati.
Jauch, Roland S., Lt. Col., 20874 Morewood Parkway, Rocky River.
Johnson, Herbert C., Major, 300 N. Mulberry, Mt. Vernon.
Johnson, James B. Jr., Capt., 19 E. Locust St., Newark.
Kane, Maurice M., Lt. Col., 423½ S. Broadway, Greenville.
Kessel, Sol, Capt., 522 Forest Avenue, Cincinnati.
Krause, George R., Lt. Col., 7911 Detroit Avenue, Cleveland.
Lederer, Henry D., Capt., 515 Melish Ave., Cincinnati.
Leichliter, John W., Lt. Col., 2123 Auburn Ave., Cincinnati.
Lohr, Lawrence J., Capt., Dayton.
McClure, Jasper R., Capt., 251 Hosea Avenue, Cincinnati.
Marinelli, Adolphus C., Lt. Col., 157 Upland Ave., Youngstown.
Markey, Robert C., Capt., 2608 Marcella Ave., Dayton.
Overs, Paul F., Capt., Spencer.

Ohio—Continued

Permut, Samuel R., Capt., 3692 Berkeley Rd., Cleveland Hgts.
Picard, Gustav G., Capt., 10616 Euclid Ave., Cleveland.
Quinn, Gerald W., Capt., 524 Dorchester Road, Akron.
Ramsayer, Herbert P., Capt., 715 21st St. N.E., Canton.
Rilling, Reginald S., Major, 125 Glendale Ave., Findlay.
Rodenberg, Elmer J., Major, Starling-Loving University Hospital, Columbus.
Rose, James E., Capt., 226 N. Spring St., Wilmington.
Rosenblum, Max H., Capt., 916 Woodlawn Rd., Steubenville.
Rosenbaum, Joseph G., Capt., N. Royalton, Brecksville.
Scaggs, William E., Capt., 2835 Willow Way, Portsmouth.
Schaal, James A. D., Capt., 4105 Glenway Ave., Cincinnati.
Schillinger, Edward N., Lt. Col., Vet. Adm. Facility, Dayton.
Schork, Rudolph J., Lt. Col., 333 4th St., Elyria.
Seymour, Miner W., Major, 2313 Berwick Blvd., Columbus.
Simon, Stanley D., Major, 3976 Beechwood Ave., Cincinnati.
Solomon, Walter M., Lt. Col., 15706 Chadbourne Road, Shaker Heights.
Steele, Wendell M., Major, 17 E. Locust St., Newark.
Stevenson, Jean M., Lt. Col., General Hospital, Cincinnati.
Thomas, James D., Capt., 160½ W. Northwood Ave., Columbus.
Troup, Paul, Major, 108 E. Siebenthaler Ave., Dayton.
Tsaloff, Nicholas M., Major, 639 Crestview, Akron.
Ulicny, Karl S., Capt., Lucas County Hosp., Toledo.
Ulin, Louis, Capt., Huron Road Hospital, East Cleveland.
Underwood, Homer D., Capt., 214 S. Shannon St., Van Wert.
Van Horn, Earl C., Major, 570 E. Northern Ave., Springfield.
Wallace, Richard H., Major, 35 S. Stanwood Rd., Columbus.
Ward, William R., Major, 1218 Lind St., Middletown.
Wilson, Sloan, J., Lt. Col., 1487 Belmont Ave., Columbus.
Zipf, Robert E., Capt., 2157 Salem Ave., Dayton.

Oklahoma

Atkins, Paul N. Jr., Major, 1239 S. Owassa, Tulsa.
Baker, John H. Jr., 1st Lt., 315 Main St, Eufaula.
Bell, Austin H., Major, 301 N.W., 12th St., Oklahoma City.
Curry, James F., Capt., 1305 E. Fairview, Sapulpa.
Epps, Curtis H., Major, 800 N.E. 13th St., Oklahoma City.
Farrell, Chester H., Major, 810 S. Williams St., El Reno.
Herrmann, Jess D., Major, 117 N. Broadway, Oklahoma City.
Lemon, Cecil W., Capt., 2304 N.W. 25th, Oklahoma City.
McClellan, Charles W., Capt., 305 E. 3d St., Claremore.
Neely, Shade D., Capt., 236 N. 17th St., Muskogee.
Pickhardt, W. L., Capt., Creek Co. Health Dept., Sapulpa.
Royce, Owen B., Major, 800 N. E. 13th St., Oklahoma City.
Salkeld, Phil L., Capt., % Dr. F. M. Adams, Box 69, Vinita.
Schaff, Hartzell V., Capt., 810 N. Burgess, Holdenville.
Starkey, Wayne A., Lt. Col., 315 E. Commerce St., Altus.
Taylor, John R., Capt., 1106 S. 7th St., Kingfisher.
Wadsworth, Ray M., Capt., % C. H. Hubbard, Sand Springs.
Wolff, Eugene G., Major, 1742 S. Wheeling, Tulsa.

Oregon

Currin, Hugh B., Capt., 1991 Van Ness St., Klamath Falls.
Himmelfarb, Max, Capt., 3462 N.E. Pacific St., Portland.
Jones, Arthur C., Capt., 3300 S.W. Heather Lane, Portland.
Reichle, Raymond M., Capt., 4132 N.E. 6th Ave., Portland.
Ruedy, Verner E., Major, 3205 S.W. Corbett Ave., Portland.
Sandlin, Dean C., Cap.t, Good Samaritan Hosp., Portland.
Singer, Isadore M., Capt., 2212 S.W. 2d Ave., Portland.
Swansen, Merle H., Major, 2029 LeRoy St., Klamath Falls.

Pennsylvania

Anastasia, John J., Capt., 635 High St., Pottstown.
Aronson, Roland S., Lt. Col., 1101 N. 63d St., Philadelphia.
Bair, Victor W., Capt., 728 Broad Ave., Belle Vernon.
Battafarano, Leonard A., Capt., 5556 Lansdowne, Philadelphia.
Bigley, Joseph R., Major, 2105 E. Huntingdon St., Philadelphia.
Blaine, Belford C., Capt., 206 W. Market St., Pottsville.
Blank, Philip, Major, 3028 Brownsville Road, Pittsburgh.
Bonacci, Richard J., Capt., Market St., Tresckow.
Boucek, Richard J., Major, 4320 Perrysville Rd., Pittsburgh.
Boyce, Bingham, Col., 527 Station St., Bridgeville.
Brader, Reid B., Capt., 254 E. Main St., Nanticoke.
Bringhurst, Louis S., Major, 5 W. Biddle St., West Chester.
Brody, Morris W., Capt., 2644 Sorento Road, Philadelphia.
Brooks, David, Capt., 310 N. 11th St., Reading.
Cahn, Milton M., 1st Lt., 317 Gladstone St., Philadelphia.
Campbell, Thomas A., Lt. Col., 3422 York Rd., Philadelphia.
Canter, Donald, Capt., 1401 S. 12th St., Philadelphia.
Capalbo, Sylvester A., Capt., 1512 S. 9th St., Philadelphia.
Carter, Herbert G., Capt., 519 Main St., Pennsburg.

PHYSICIANS SEPARATED FROM SERVICE

Pennsylvania—Continued

Cattanach, Lachlan McA., Capt., 96 S. Franklin St., Wilkes-Barre.
Chollak, Joseph P., Capt., 786 Main St., Edwardsville.
Chunn, Livingston, Capt., 224 N. 10th St., Philadelphia.
Cohen, Morris, Capt., 2506 Center Avenue, Pittsburgh.
Clark, Joseph G., Major, 344 W. Union St., West Chester.
Deibert, Edward B., Capt., 1406 Main St., Hellertown.
Deibert, Glenn A. H., Capt., 811 N. 5th St., Reading.
Demoise, Peter F., Capt., RD 5, Greensburg.
Detuerk, John J., Capt., Jefferson Hosp., Philadelphia.
Duane, William Jr., Capt., 1928 DeLancey Pl., Philadelphia.
DeWoody, Gerald McD., Capt., Duke Center.
Donaldson, James O. Jr., Capt., 510 E. Brady St., Butler.
Dostal, Francis P., Capt., 300 Greeve St., Conemaugh.
Dugan, Charles R., Capt., 1824 E. Schiller St., Philadelphia.
Edwards, Thomson, Major, 703 Lindale Avenue, Drexel Hill.
Eisenberg, Richard B., Major, 1418 Pearce Park, Erie.
Eisenhower, Charles E., Major, Hosp. of U. of Pa., Philadelphia.
Elicker, Charles R., Major, 151 N. Hanover St., Pottstown.
Emmerling, John F., Major, 515 S. Aiken Ave. E.E., Pittsburgh.
Ettenger, Morris S., 1st Lt., 5544 Lansdowne Ave., Philadelphia.
Ewing, David Q., Major, 400 S. 45th St., Philadelphia.
Fair, Jacob C., Capt., 249 Arch St., Kittanning.
Fiedler, Roy W., Capt., 209 Olympia St., Pittsburgh.
Finkelman, Samuel, Capt., 413 Littlecroft Rd., Upper Darby.
Finkelstein, David, Capt., 301 S. 63d St., Philadelphia.
Flanigan, Edward A. Jr., Capt., 13 Valley St., New Philadelphia.
Flick, L. F. III, Capt., Montgomery Ct. Apt., L 13, Narberth.
Forsyth, Robert L., Capt., 7526 Edgerton Ave., Pittsburgh.
Freedman, Howard, Capt., 4763 N. 10th St., Philadelphia.
Fretz, Howard Z., Capt., 1207 W. Erie Ave., Philadelphia.
Gerth, Eugene W., Major, 114 S. 6th St., Columbia.
Gibbon, John H. Jr., Lt. Col., 4035 Pine St., Philadelphia.
Gleason, George E., Capt., 300 Luzerne St., Johnstown.
Goeringer, Clare F., Major, 55 S. Washington, Wilkes-Barre.
Gribb, Joseph C., Capt., 1509 Market St., Harrisburg.
Grim, Mark D., Capt., Oley.
Hain, Howard L., Capt., 21 W. Main St., Annville.
Hammer, Samuel F., Major, 609 Maplewood, Ambridge.
Hauer, Adam M., Capt., 320 Cumberland St., Lebanon.
Hearn, William P. Jr., Capt., 440 Woodbine Ave., Narberth.
Herron, Frank T., Capt., 3708 5th Avenue, Pittsburgh.
Hieber, George F., Capt., Perrysville.
Hotham, Harland DeV. Jr., Capt., 327 Fourth St., Freeport.
Jacobson, Robert M., Major, 220 Pine St., Punxsutawney.
Jaczack, Sigmund M., Capt., 211 E. Broad St., Tamaqua.
Jahnig, Richard P., Capt., 118 Spring St., Reading.
Janjigian, Robert R., Major, 1043 Wyoming Ave., Forty Fort.
Kameen, Anthony J., Capt., 826 N. Main St., Forest City.
Kane, James A., Major, 223 Wolf St., Philadelphia.
Katz, Benjamin R., Capt., 200 N. 52d St., Philadelphia.
Kielty, John T., Capt., 12 Main St., Towanda.
King, Orville C., Lt. Col., 255 S. 17th St., Philadelphia.
Knoch, Henry R., Capt., 545 W. King St., York.
Koebert, Martin J., Maj., 1847 E. Allegheny Ave., Philadelphia.
Krall, John T., Major, 134 Lansdowne Ct., Lansdowne.
Kreger, Oliver J. Jr., Capt., 35 McKee Ave., Monessen.
Kretz, Stewart F., Capt., 4636 Center Avenue, Pittsburgh.
Kuty, Eugene J., Capt., 422 Wyandotte, Bethlehem.
Laplace, Louis B., Lt. Col., 1900 Rittenhouse Sq., Philadelphia.
Larkin, Walter J., Lt. Col., 320 W. Market St., Scranton.
Latham, Kent G., Major, 301 Jenkins Bldg., Pittsburgh.
Leber, Alfred P., Capt., 121 McKinley Ave., Lansdowne.
Leisawitz, Paul A., Capt., 36 N. 11th St., Reading.
Lerner, Joseph, 1st Lt., Waterloo Ave., Berwyn.
Liberace, Ettore V., Major, 1315 Main St., Darby.
Lohmann, John, Capt., 1211 Oram St., Scranton.
Lorusso, N. A., Capt., 174 E. Northampton St., Wilkes-Barre.
Lussier, Arthur H., Major, 6441 Jackson St., Pittsburgh.
MacMinn, Charles C. Jr., Major, Lincoln Way East, New Oxford.
Mainzer, Francis S., Major, 725 Wash. St., Huntington.
Mangold, Francis N., Major, 11 N. Chestnut St., Scottdale.
Markley, William M., Capt., Lamberton.
Martin, Christine A., Capt., Phila. General Hosp., Philadelphia.
Martin, Frederick H., Major, RFD, Macungie.
Moir, John A., Major, 6417 Windsor Ave., Philadelphia.
Moylan, Robert E., Capt., 115 N. Main Ave., Scranton.
Nealon, William K., Capt., 226 S. Aiken Ave., Pittsburgh.
Nelowet, Erwin J., Capt., 19 W. Fornance St., Norristown.
O'Donnell, Ward M., Capt., 602 James St., Hazleton.
Oetting, Edward M., 1st Lt., 407 Whitney Ave., Pittsburgh.
Owens, Hobart N., Capt., 416 Church St., Hadley.
Parker, William S., Lt. Col., 2918 Haverford Rd., Ardmore.
Pearlman, William, Capt., 68 S. Washington St., Wilkes-Barre.
Peterson, Charles B. Jr., Capt., 203 S. Queen, Lancaster.
Petree, Paul A., Lt. Col., Harrisburg State Hosp., Harrisburg.
Pomeroy, James M., Capt., 9th Barclay St., Chester.
Redfield, Ronald L., Major, 21 Center St., Oil City.
Reinheimer, Kenneth G., Capt., Bridge St., Weissport.
Reppun, John T. F., Capt., 137 W. 9th Ave., Homestead.
Reyer, William A., Capt., 123 Hazen Place, Sharon.
Rittenhouse, Frank H., Capt., 600 Bank St., Bridgeville.
Robinson, Joseph, 1st Lt., 183 3d Ave., Kingston.
Roeder, Paul H., Capt., 1401 Westwood Lane, Overbrook, Philadelphia.
Rogers, William H. III, Capt., 308 Walnut St., Spring City.
Romanow, Peter W., Major, 810 E. Allegheny, Philadelphia.
Rupp, Joseph J., Capt., 2207 Jackson St., Scranton.
Ryscavage, Edward T., Capt., 100 S. Second St., St. Clair.
Schifalacqua, Philip A., 1st Lt., 1618 S. 12th St., Philadelphia.
Schmidt, Ralph E., Major, 2148 Union Ave., Wesleyville.
Schubart, George R., Capt., 2265 Garrett Rd., Drexel Hill.
Smaltz, John E., Lt. Col., 36 E. Baltimore Ave., Media.
Spector, Samuel S., Capt., 304 N. High St., West Chester.
Stiles, Merritt H., Lt. Col., 113 W. Chestnut Hill, Philadelphia.
Stirling, Warren, Col., 14 Kathmere Road, Havertown.
Stockton, Harry T., Capt., 5 Henderson Avenue, Ridley Park.
Taylor, James T., Lt. Col., 936 Ferndale Ave., Johnstown.
Templeton, Frederick G., Major, 108 East St., Warren.
Thompson, Thomas E. Jr., Major, 718 California Ave., Avalon.
Toloff, Edward M., Capt., 3863 Beechwood Blvd., Pittsburgh.
Trexler, Clifford H., Major, RFD 1, Mertztown.
Updegraff, William C., Capt., 2707 Brownsville Rd., Pittsburgh.
Vilsack, George R., Major, 1516 Beechwood Blvd., Pittsburgh.
Vitullo, Nicholas J., Capt., 1314 S. Broad St., Philadelphia.
Wagner, Ira G. Jr., Lt. Col., 301 W. Main St., Ephrata.
Weisser, Charles W., Capt., 5827 Elwood Gardens, Pittsburgh.

Rhode Island

Chafee, Francis H., Major, 12 Humboldt Ave., Providence.
Crank, Rawser P., Major, 794 Park Ave., Cranston.
Croce, Gene A., Capt., 111 Waverly St., Providence.
Cutts, Frank B., Lt. Col., 378 Rochambeau Ave., Providence.
Donahue, John J., Capt., 115 Beckwith St., Cranston.
Murphy, Robert G., Major, 428 Lloyd Ave., Providence.
Normandin, L. A., Lt. Col., 240 Taunton Ave., East Providence.
Sharp, Benjamin S., Major, 245 Freeman Pky., Providence.
Speidel, Glenn P., Capt., 28 Slater Ave., Providence.

South Carolina

Chamberlain, Olin B., Col., 95 Rutledge Ave., Charleston.
Edwards, William W., Lt. Col., Professional Bldg., Greenville.
Evans, William Jr., Capt., 901 E. Main, Bennettsville.
Gaston, Frank P., Capt., Rock Hill.
Jeanes, Robert P., Major, 1 Liberty Dr., Easley.
Robinson, John F., Major, 627 N. Fant St., Anderson.
Weinstein, Howard I., Capt., 264 Broad St., Sumter.

South Dakota

Adams, Harold P., Capt., 450 Dakota South, Huron.
O'Connor, Sylvester J., Capt., Burbank.

Tennessee

Buchner, Edward F. Jr., Major, 2917 Sunbeam, Chattanooga.
Cardwell, Edward S. Jr., Lt. Col., U. of Tenn., Memphis.
Freeman, Paul R., Capt., 1139 Madison Ave., Memphis.
Goldsmith, Lester I., Capt., 1386 Vinton Ave., Memphis.
Hayward, Joseph C., Major, 707 Georgia Ave., Chattanooga.
Livingston, Philip H., Major, Road House, Chattanooga.
Miller, Richard W., Capt., 2410 Autumn, Memphis.
Nave, Dick D., Capt., Mountain City.
Nichols, Ralph G., Capt., 518 W. Atlantic Ave., Knoxville.
Patterson, Joseph H., Major, Vanderbilt Hosp., Nashville.
Read, Charles T., Capt., 403 Fleetwood Dr., Lookout Mt.
Roberts, Richard H., Capt., 209 31st Ave. N., Nashville.
Rosenfeld, Louis, Capt., Vanderbilt Univ. Hosp., Nashville.
Sams, James M., Capt., 214 Love St., Erwin.
Sohm, John J., Major, 1035 Jefferson Ave., Memphis.
Sulman, Sam N., Capt., Baroness Erlanger Hosp., Chattanooga.
Sumpter, William D. Jr., Capt., 1108 19th Ave. S., Nashville.
Talley, Byron S., Lt. Col., 847 Madison Ave., Memphis.
Watson, James E. Jr., Col., 706 Mansfield St., Memphis.
Williams, Cordell H., 1st Lt., 271 Pasadena Pl., Memphis.
Wright, James C., Lt. Col., Med. Arts Bldg., Chattanooga.
Youmans, John B., Col., RFD 5, Nashville.

PHYSICIANS SEPARATED FROM SERVICE

Texas

Altgelt, Daniel D., Major, 165 Schreiner Pl., San Antonio.
Ault, Charles A. Jr., Lt. Col., 4030 Junius, Dallas.
Bruce, Robert G., Capt., 502 W. Hubbard St., Mineral Wells.
Cody, Melville L., Capt., 1307 Harold St., Houston.
Cohen, Meyer, Capt., 308 Ward St., Marlin.
Compere, Clinton L., Lt. Col., Decatur.
Cooper, Arlin B., Major, Ben Wheeler.
Davenport, Harbert Jr., Lt. Col., 542 Washington, Brownsville.
De Haro, Joseph A., Capt., 4218 Newton, Dallas.
Donoho, Charles P., Capt., 3901 Duval St., Austin.
Eads, Ray A., Major, Uvalde.
Edwards, Robert A., Capt., 20 W. Oak Dr., Houston.
Feener, Lester C., Major, 1202 E. Taylor, Harlingen.
Garcia, Robert E., Major, Falfurrias.
Goddard, Chauncey G., Capt., 1924 Herring Ave., Waco.
Gonzalez, Hesiquio N., Capt., 2115 Saunders Ave., San Antonio.
Henderson, Walter T. Jr., Major, 111 E. Woodin Blvd., Dallas.
Hodde, Herman O., Capt., Box 601, Brenham.
Hurt, Leonard B., Major, 4236 San Carlos Dr., Dallas.
Kreisle, James E., Capt., 811 W. 31st St., Austin.
Kunath, Carl A., Capt., 608 E. Parkway, San Angelo.
Littell, Milton, Capt., 6711 Harrisburg Blvd., Houston.
Matlock, Thomas B., Major, 424 Adams Bldg., Port Arthur.
McCulley, Jacobus D.,Capt., 2334 Tangley Rd., Houston.
Miller, Jarrell E., Capt., 2302 Fresno St., San Antonio.
Mitchell, Harry J. Jr., Capt., 4217 Swiss Ave., Dallas.
Montalvo, Lauro, 1st Lt., Box 58, Zapata.
Norman, Floyd A., Lt. Col., 4585 Belfort Pl., Dallas.
Parks, Walter S. Jr., Capt., 1300 E. Walker St., Breckenridge.
Partain, Jack M., Major, 215 Camden Ave., San Antonio.
Petway, Max E., Major, 6000 Del Rio, Houston.
Prieto, Philip M., Capt., 124 N. Eucalyptus Ave., El Paso.
Richey, Harvey M. Jr., Capt., 1825 Colonial, Waco.
Robertson, Robert C. L., Lt. Col., 615 Hathaway, Houston.
Rodarte, Ruben B., Capt., 501 Porfirio Diaz St., El Paso.
Simons, Jack H., Capt., 590 Avenue J, Newgulf.
Smith, Thomas E., Major, 1110 N. Oak Cliff Blvd., Dallas.
Speck, Carlos D. Jr., Major, 202 E. 9th St., Austin.
Stansell, Paul Q., Lt. Col., 2048 W. Huisache, San Antonio.
Stevenson, Walter H., Col., 614 N. Oregon St., El Paso.
Tester, Lewis K., Major, 1327 MacKenzie St., San Angelo.
Thornton, Elbert Horace E., Capt., Box 139, Odessa.
Ulert, Izaak A., 1st Lt., 1101 Welch, Houston.
Urrutia, Adolfo, Capt., 107 Rosemary, San Antonio.
Wagner, Robert G., Capt., 3210 Enfield Rd., Austin.
Wells, Benjamin B., Major, Temple.
Williams, Charles R., Col., 312 N.W. 2nd St., Mineral Wells.
Williford, Louis E., Major, 504-6 Shell Bldg., Houston.
Wilson, James D., Major, 2011 30th St., Lubbock.
Wright, Carleton C., Capt., Junction.
Yelderman, Gus C., Major, Rosenberg.
Zarsky, Emil P., Capt., Refugio.

Utah

Sevy, V. M., Capt., 735 S. 11th East, Salt Lake City.
Simonson, Eric E., Capt., Castlegate.
Smith, Joseph R., Major, 444 W. 1st St., Provo.

Vermont

Allen, Sinclair T. Jr., Capt., 44 Oak St., Proctor.
Cudlipp, Ralph L. Jr., Capt., 10 Handy Ct., Burlington.
Dente, Gino A., 1st Lt., 387 N. Main St., Barre.
Dente, Nelson J., Capt., 25 S. Main St., Barre.
Rowe, Harry M., Capt., 121 S. Willard St., Burlington.
Seeley, Ralph H. Jr., Capt., 216 Grove St., Rutland.
Wigh, Russell, Major, 74 Colfax St., Newport.

Virginia

Adams, Samuel T., Capt., The Plains.
Arnett, Eugene W. Jr., Capt., 169 Holbrook Ave., Danville.
Crigler, Fielding J., Lt. Col., 104 E. Market St., Charlottesville.
Farber, Herman W., Major, 620 N. Road, Richmond.
Ferrell, George S., Capt., 119 Fredonia Ave., Lynchburg.
Kincheloe, Charles F., Major, 4103 N. 4th St., Arlington.
McAllister, Russell G., Capt., 3217 Seminary Ave., Richmond.
Rucker, Samuel L. Jr., Capt., Moneta.
Snider, George E., Capt., Box 370, Pulaski.

Virginia—Continued

Stratton, E. W. Jr., Major, 206 6th St., N.W., Charlottesville.
Wood, William H. Jr., Major, Fendall Ave., Charlottesville.
Yates, Munford R., Major, 1105 Overbrook Rd., Petersburg.

Washington

Anderson, Oscar W., Capt., 3211 10th Ave., West Seattle.
Anthony, Marc, Major, 1120 S. Wall St., Spokane.
Austin, Warren R., Capt., 1743 26th Ave. N., Seattle.
Layton, Edwin G., Major, 2471 42d St. W., Seattle.
Lightburne, William J., Major, Palouse.
Lugar, Leland R., 1st Lt., 1310 S. 16th Ave., Yakima.
Walsh, Alton L., Major, Walsh Block, Everett.

West Virginia

Batalion, Abraham L., Capt., Amegle.
Dupuy, Elbert N., Major, 109 S. Kanawha St., Beckley.
England, Welch M., Lt. Col., 1601 23d St., Parkersburg.
Giffin, Theodore C., Capt., 54 N. Main St., Keyser.
Goodhand, Charles L. Jr., Lt. Col., 1130 Market, Parkersburg.
Hager, James L., Capt., 5226 McCorkle Ave. S.E., Charleston.
Jacob, Samuel S. III, Major, Main St., Bethany.
Pettit, Harold S., Capt., 85 S. Kanawho St., Buckhannon.
Revercomb, Paul H., Lt. Col., 2006 Kanawha Ave., Charleston.
Shafer, Cecil W., Major, Parkersburg Rd., Spencer.

Wisconsin

Anderson, Paul D., Capt., 2027 Cass St., LaCrosse.
Arnold, William G., Capt., Wittenberg.
Currer, Paul R., Capt., 2779 N. 41st St., Milwaukee.
Finucane, P. J., Lt. Col., Milwaukee Co. Hosp., Wauwatosa.
Foley, Mark E., Capt., St. Nazianz.
Frank, Horace A., Capt., Neillsville.
Freitag, Samuel A., Major, 403 Oakland, Janesville.
Hildebrand, George B., Capt., 125 S. Locust St., Reedsburg.
Jerome, Bourne, Major, 407 Board of Trade Bldg., Superior.
Klepfer, Jefferson F., Major, Central State Hosp., Waupun.
Larrabee, Walter F. Jr., Capt., 504 W. Central, Chippewa Falls.
Meyer, Bertrand W., Capt., Wisconsin Gen. Hosp., Madison.
Morrison, Donald A. R., Lt. Col., Box 31, Oconomowoc.
Reibold, Frank W., Capt., 633 Sheldon St., Madison.
Rogers, Albert F., Capt., 825 N. 33d St., Milwaukee.
Seelman, Alvin G., Capt., 3838 N. Farwell Ave., Milwaukee.
Sheehan, E. T., 1st Lt., 5714 W. Roosevelt Dr., Milwaukee.
Thuerer, George R., Capt., 526 3rd Ave., Baraboo.

Wyoming

Clarke, Edward J., Capt., 2919 Thomas Ave., Cheyenne.
Booth, Louis G., Capt., Sheridan.
Wanner, Jay G., Lt. Col., 817 Bushnell Ave., Rock Springs.
Williams, Nathaniel O., Capt., Vogel Bldg., Cody.

Puerto Rico

Licha, Jose S., Capt., Box 1165, San Juan.
Serra-Chavarry, Jaime, Major, 32 Hernandez St., Santurce.

Canada

Manning, John E., Capt., 1448 Dufferin St., Winsor, Ont.

RECALLED TO ACTIVE DUTY OR NOT RELIEVED

Allen, Kenneth D. A., Col., 452 Metropolitan Bldg., Denver.
Amster, Milton W., Major, 395 Ocean Ave., Brooklyn, N. Y.
Blumberg, J. M., Lt. Col., 3510A Liberty Hgts. Ave., Baltimore.
Boykin, James M., Lt. Col., Taft, Texas.
Connor, Samuel Walter, Lt. Col., Camdenton, Mo.
DePasquale, M. N., Capt., Laurel Ave., E. Northport, N. Y.
Evashwick, G., Major, 23 Prospect St., Turtle Creek, Pa.
Gordon, Hirsch Loeb, Capt., 605 Beech Terrace, Bronx, N. Y.
James, Charles F. Jr., Major, Appomattox, Va.
Kaufman, Maurice, Capt., 231 Park Dr., Boston.
Loeffler, R. W., Major, 4137 S. Wenonah Ave., Berwyn, Ill.
McCarthy, J. S., Capt., 640 Whitney Ave., New Haven, Conn.
Medalia, Leon S., Lt. Col., 78 Bay State Rd., Boston, Mass.
Phillips, C. M., Major, 423 Rigsby Ave., San Antonio, Texas.
Smith, Joseph R., 1st Lt., 303 College St., Paris, Tenn.
Werts, Kenneth George, Capt., Westport, Pa.

ORGANIZATION SECTION

Official Notes

RESIGNATION OF DR. OLIN WEST; APPOINTMENT OF DR. GEORGE F. LULL AS GENERAL MANAGER AND AS SECRETARY PRO TEM.

Following the resignation of Dr. Olin West as Secretary and General Manager of the American Medical Association, the Board of Trustees has appointed Dr. George F. Lull as General Manager of the Association, beginning April 1, 1946 and has elected him Secretary of the Association until the next annual session of the Association, to fill the unexpired term of Dr. West.

BOARD OF TRUSTEES,
AMERICAN MEDICAL ASSOCIATION,
R. L. SENSENICH, Chairman.

Medical Legislation

MEDICAL BILLS IN CONGRESS

National Medical Research Foundation

Congressman Stevenson, Wisconsin, has introduced H. R. 5715, a bill to establish in the executive branch of the government an independent agency to be known as the National Medical Research Foundation to initiate, conduct and support scientific research with respect to the cause and cure of cancer, poliomyelitis, rheumatic fever, Bright's disease, hay fever, asthma, arthritis, leukemia, encephalitis, arteriosclerosis, aplastic anemia and rheumatic heart disease.

Hospital Construction

H. R. 5407 has passed the House, a bill to grant to the Federal Works Administrator certain powers with respect to site acquisition, building construction and purchase of buildings. When this bill was considered in the House, March 18, Congressman Elliott, California, submitted an amendment authorizing an appropriation of $50,000,000 for use by the Federal Works Administrator in making grants to public and private agencies for the construction of hospital facilities. The amendment was rejected on a point of order made by Congressman Wadsworth, New York.

Commission for the Physically Handicapped

Hearings have been scheduled by a subcommittee of the House Committee on Labor on H. R. 5206, a bill to establish a Federal Commission for the Physically Handicapped in the Department of Labor. The hearings will begin on April 30 and will conclude, it is contemplated, on May 4. This bill, among other things, proposes to transfer to the federal commission to be created all functions of the Office of Vocational Rehabilitation now in the Federal Security Agency. The bill would establish in the commission separate divisions for special work with the deaf, the hard of hearing, cardiac patients, the tuberculous, the poliomyelitic, the epileptic, amputees and any other large or distinct groups of physically handicapped.

Miscellaneous

H. J. Res. 324, introduced by Congressman Norrell, Arkansas, proposes to request the President to issue a proclamation designating the 28th day of October of each year as National Arthritis Day. S. 1914, introduced by Senator Langer, North Dakota, proposes to authorize to be appropriated such sums as may be necessary to enable the Federal Security Administrator to make loans to nonprofit organizations to assist them to finance the construction of domiciliary facilities for the aged or the blind. The House Committee on Military Affairs has favorably reported H. R. 5626, proposing to authorize the Veterans Administration to appoint and employ retired officers without affecting their retired status. The authority to employ retired commissioned or retired warrant officers will be effective for a period of five years.

STATE LEGISLATION

California

Bill Enacted.—S. 3-X has become chapter 129 of the Laws of 1946. It authorizes the acquisition of land and buildings for temporary state hospital facilities, such property to be operated by the department of mental hygiene on a temporary basis as temporary state mental institutions.

Idaho

Bill Enacted.—H. 16-X was approved March 9, 1946. It authorizes an appropriation to the department of public health for the purpose of providing tuberculosis hospitalization and relief.

Kentucky

Bills Passed.—H. 171 passed the senate March 20. It proposes the enactment of a law authorizing the establishment, maintenance and operation of medical service plan corporations. "Medical services" means the "general and usual services rendered and care administered by doctors of medicine." "Participating physician" would mean a "doctor of medicine licensed to practice medicine and surgery in this state under the provisions of the medical practice act" who agrees in writing to perform the services specified by the subscription certificates. H. 300 passed the senate March 15. To amend the law relating to pharmacies and drugs, it proposes to make it unlawful to sell at retail any drug which contains any quantity of aminopyrine, barbituric acid, cinchophen, dinitrophenol, pituitary, sulfanilamide, thallium acetate, thyroid, or their derivatives, or a drug or device the label of which bears a statement that it is to be dispensed or sold only by or on the prescription of a physician, dentist or veterinarian, unless such drug is sold on a written prescription signed by a member of the medical, dental or veterinary profession who is licensed by law to administer such drug or device, and its label bears the name and place of business of the seller, the serial number and date of such prescription, and the name of such member of the medical, dental or veterinary profession. S. 152 passed the senate March 13. To amend the law relating to the practice of pharmacy, it proposes that any one who, while in the service of the armed forces, was regularly employed for a period of not less than twelve months in the preparation and dispensing of drugs and medicines and who, in addition thereto, has successfully completed at least two years of study in a recognized college of pharmacy may apply for a pharmacist's license.

Mississippi

Bills Introduced.—H. 699 was previously reported as proposing to authorize the state board of examiners to proceed by injunction to prohibit any person from practicing any profession licensed under the supervision of said board when such person is not duly licensed so to practice. This bill was amended in the house on March 14 by proposing to exempt from its provisions persons practicing chiropractic, osteopathic or veterinary sciences. H. 893, to amend the law relating to ad valorem taxes, proposes to exempt from such tax all plants manufacturing, processing or preparing dentifrices, medicines, drugs or pharmaceuticals. H. 974 proposes an appropriation for the purpose of providing a site for the construction and erection of a general children's hospital for the care and treatment of sick, injured and infirm children and children who are the victims of infantile paralysis or other crippling diseases or infirmities. H. 1016 proposes that any student nurse who takes training provided for nurses in any hospital in the state, supported in whole or in part by state funds having a registered nurse in charge, is authorized to take the examination to become a registered nurse, and if a passing grade is made on such examination such a student nurse is entitled to all rights and benefits now provided for registered nurses. S. 414, relating to the transport of intoxicating liquor into the state, proposes to authorize the issuance of permits for the importation of alcohol for scientific or mechanical purposes by and to such scientific institutions, universities and colleges as are authorized to secure the same free of tax under the laws of the United States and alcohol by and to hospitals and sanatoriums for medical use in such hospitals and sanatoriums, and for the importation and transportation of alcohol to and by any apothecary, druggist, pharmacist or manufacturing agency who shall need the same for such purpose.

Bills Passed.—H. 72 passed the senate March 19. It proposes the creation of a four year medical school as a department of the University of Mississippi which shall be operated as a class A medical school in accordance with the "Council of Medical Education" of the American Medical Association. H. 994 passed the house March 20. It proposes an appropriation to be used and expended by the state board of health and the state department of education in cooperation with the international health division of the Rockefeller Foundation and the general education board, respectively, in carrying out a program of coordinated school, health and nutrition services. S. 181 passed the senate March 13. To amend the law relating to the issuance of marriage licenses, it proposes that both parties applying for a license to marry shall submit to a thorough medical examination by an active licensed physician in Mississippi, by a physician licensed to practice in any or all of the other states of the Union or the District of Columbia, by a commissioned medical officer on active duty in the armed forces of the United States or by a medical officer of the United States Public Health Service, provided said medical examination may be made free of charge by any full time county health officer licensed to practice medicine in Mississippi if the person examined is unable to pay for same. Medical examinations would include a standard serologic test or tests for syphilis.

Missouri

Bills Passed.—S. 343 passed the senate March 12. It proposes the creation of a bipartisan board of six members to be known as the Missouri State Board of Medical Examination and Registration to register and license persons for the practice of medicine and surgery, midwifery and chiropody, and proposes further to transfer the records now in the possession of the department of medical licensure of the state board of health of Missouri to the Missouri State Board of Medical Examination and Registration. S. 433 passed the senate March 19. It proposes to transfer to the state board of chiropody certain powers relating to licensing and registration of practitioners heretofore vested in the state board of health. S. 434 passed the senate March 19. Relating to the licensing of midwives, it proposes to transfer to the division of registration and examination of the state department of education certain powers heretofore vested in the state department of health. S. 456 passed the senate March 19. It proposes the creation of a division of the state department of education to be known as the division of registration and examination and assigns as boards of said division the state board of medical examiners, state board of osteopathic registration and examinations, state board of chiropractic examiners and others.

New Jersey

Bill Passed.—A. 164 passed the assembly March 19. To amend the medical practice act, it proposes an addition to the board of medical examiners of a chiropodist to have equal rights and privileges in all matters affecting chiropody.

Bills Enacted.—A. C. R. 3 was filed with the secretary of state February 11. The adopted resolution proposes the enactment of an unemployment sickness compensation law and submits a proposal to the legislature constituting such a law. A. 69 has become chapter 22 of the Laws of 1946. It authorizes the establishment and maintenance of blood banks to collect, process, store and distribute human blood and the various human blood derivatives, including special therapeutic and diagnostic serums which are deemed of value in the treatment of sick and injured persons and the prevention of certain diseases.

New York

Bills Introduced.—A. 2274 and S. 1998, to amend the public health law, propose provisions governing the furnishing of care and treatment to persons suffering from tuberculosis and diagnostic tests, studies and analyses for the discovery of tuberculosis, without cost or charge to any resident of the state who is suffering from tuberculosis or is suspected of having tuberculosis. A. 2524 is similar to S. 2038, previously reported. To amend the labor law, it proposes the enactment of a disability benefit law. A. 2578 is similar to S. 2238, previously reported. To amend the insurance law, it proposes to remove therefrom the general prohibition against authorizing foreign or alien medical expense indemnity or hospital service corporations from doing business in the state. A. 2580, to amend the education law, proposes the creation by the commissioner of education of a division of psychology to consider curricular adjustments for superior and/or handicapped students. A. 2582, to amend the education law, proposes the granting of a license to practice physiotherapy without examination to persons showing a certificate of honorable discharge from the United States army, navy or marine corps and presenting to the department evidence that at the time of entrance into the military service he was a resident of the state and a graduate in good standing of a legally chartered school or college in the United States teaching physiotherapy, which school required a course of study equivalent to four years of seven months each. A. 2653 and S. 2260 propose the creation of a temporary state commission to make a study and survey of the prevalence and facilities for the treatment of cancer cases within the state. A. 2654 and S. 2218 propose an appropriation to Cornell University for the use of the memorial cancer center fund for cancer research and for the treatment, prevention and care of cancer and allied diseases. A. 2686, to amend the labor law, proposes to redefine the term "total unemployment" to mean the total lack of any employment on any day, caused by the inability of a claimant who is capable of and available for work to engage in his usual employment or in any other form for which he is reasonably fitted by training and experience, except for total lack of any employment on any day or succession of days on account of a condition of pregnancy attested or certified in writing by an attending physician within such time and in such manner as the commissioner shall prescribe, to the extent that such lack of employment on account of a condition of pregnancy is not compensable under any plan or system of benefits or compensation established by the employer. S. 2087 is similar to A. 2377, previously reported. It proposes to authorize corporations organized under the consumers' cooperative stock corporation law for the purpose of furnishing medical expense indemnity service to persons who become subscribers under contracts with such corporations to reincorporate under the membership corporations law. S. 2123 is similar to A. 2395, previously reported. Relating to the creation of a nutrition council, it proposes the creation of a state nutrition council to coordinate all the state's nutritional activities; conduct research or allocate a portion of its funds for research in nutrition; recommend reorganization of the state's nutritional activities; launch a widescale advertising, publicity and promotional campaign of instruction of the elements constituting a sound diet and the proper use of such farm products as may become surplus from time to time; and to do such other things as the council may deem essential for improving the nutritional status of the people.

Bills Passed.—A. 1973 passed the assembly March 13 and the senate March 18. To amend the state licensing law, it proposes that persons lawfully inducted into the military service who were licentiates under the state law at the time of their induction may apply for a renewal of their license within three months of discharge from the service or within three months of discharge from any period of hospitalization in a facility maintained by the United States Veterans Administration. A. 1974 passed the assembly March 13 and the senate March 18. To amend the state licensing law, it proposes to postpone from July 1946 to July 1947 the time during which previous licentiates whose licenses lapsed during military service may have a renewal license without examination. A. 2083 passed the assembly March 18. It proposes to extend the life of the temporary state commission previously appointed to formulate a long-range health program from March 1946 to March 1947. S. 577 passed the assembly March 13. To amend the workmen's compensation law, it proposes that physician members of the industrial council shall not be eligible for authorization to render medical aid under the workmen's compensation law and shall not examine, treat, consult or in any other way care for a compensation claimant at the request either of the claimant or of a carrier. S. 986 passed the assembly March 13. It proposes the creation of a temporary state commission to examine into the need for and to make recommendations relative to the creation of a state university. S. 1000 passed the assembly March 19. To amend the law relating to privileged communications, it proposes the waiver of such privilege by any party in interest in any litigation wherein the interests of the personal representative of the deceased patient are deemed by the trial judge to be adverse to those of the estate. S. 1772 passed the senate March 13. To amend the state licensing law, it proposes to postpone from July 1945 to July 1947 the time during which previous licentiates whose licenses lapsed during military service may have a renewal license without examination. This bill is similar to A. 1974. S. 1773 passed the senate March 13. To amend the state licensing law, it proposes that persons lawfully inducted into the military service who were licentiates under the state law at the time of their induction may apply for a renewal of their license within three months of discharge from the service or within three months of discharge from any period of hospitalization in a facility maintained by the United States Veterans Administration. This bill is similar to A. 1973. S. 1797 passed the senate March 14. To amend the workmen's compensation law, it proposes that physician members of the industrial council shall not be eligible for authorization to render medical care under the act and shall not examine, treat, consult or in any other way care for a compensation claimant at the request either of such claimant or of a carrier. This bill is similar to S. 577. S. 2242, to amend the education law, passed the senate March 20. It proposes to provide for the revocation or annulment of a license to practice medicine for splitting fees in x-ray diagnosis or physiotherapeutic or pathologic examination or diagnosis, or administering anesthesia, but would permit a physician to contract with nonprofit hospitals for not to exceed a year with financial provisions subject to review by an arbitration committee.

Rhode Island

Bill Introduced.—H. 855, to amend the law relating to health of school children, proposes that the services rendered to school children shall be rendered by duly licensed physicians or dentists.

Bill Passed.—H. 569 passed the house March 14. To amend the law relating to discrimination by any state department against certain professional groups of the healing arts, it proposes to include chiropractors within the group against which no discrimination is allowed.

South Carolina

Bill Passed.—S. 124 passed the house March 12. It proposes the creation of a South Carolina Hospital Commission to make a complete survey of the hospitals, health centers and other related facilities in the state and to file reports and recommendations concerning the same to the next session of the general assembly.

Virginia

Bill Enacted.—H. 289 has become chapter 164 of the Laws of 1946. It requires persons dealing in the handling and processing of food for human consumption to submit each six months a certificate from a physician duly licensed for that purpose by the state board of health, certifying that such person has been examined and found free from any contagious or infectious disease.

West Virginia

Bill Passed.—S. 3-X, passed the house March 22. To amend the law relating to hospital and medical service plan corporations, it proposes a new law for the organization and regulation of hospital service and medical service corporations. Among other features, it proposes the creation of a hospital and medical service advisory council to assist the insurance commissioner in the supervision of such corporations. "Medical service" would be defined as "such medical and surgical care, to be provided by duly licensed physicians, or such payment therefor, as may be specified in the contract made by the subscriber with the corporation."

Council on Medical Service and Public Relations

RADIO TRANSCRIPTIONS NOW READY

"The Public Comes First," a new series of six radio transcriptions prepared by the Council on Medical Service and Public Relations in cooperation with the Bureau of Health Education, is ready for distribution. These transcriptions, in which Harriet Hester, nationally known radio script writer, interviews members of the Council, deal with various phases of the medical care problem, urban and rural health, voluntary prepayment plans and the A. M. A. Constructive Program for Medical Care. These consist of the following fifteen minute transcriptions:

"What Constitutes Adequate Medical Care?" Dr. Roger I. Lee and Dr. Thomas A. McGoldrick.
"What Are Rural Medical Problems?" Dr. James R. McVay and Dr. W. R. Brooksher.
"The Costs of Illness," Dr. Louis H. Bauer.
"Hospital Insurance and How to Make Use of It," Dr. Alfred W. Adson and Mr. John R. Mannix.
"Prepaid Medical Service Plans," Dr. John H. Fitzgibbon and Mr. J. C. Ketchum.
"The Public Comes First," Dr. Herman L. Kretschmer and Dr. E. J. McCormick.

Notices of this service have been sent to various radio stations throughout the country. Proper committees of county medical societies are urged to contact their local radio stations and schedule these broadcasts. Stations are scheduling these on a sustaining (no fee) basis. These platters may be obtained free of charge by writing direct to the Bureau of Health Education or the Council office.

PREPAID MEDICAL CARE NEWS

Voluntary Prepayment Medical Care Plans—1945

The number of voluntary prepayment medical care plans sponsored or approved by medical societies is increasing so rapidly that any report becomes outdated before it is published. The most recent report, that of the Federal Security Agency, lists fifty-three such plans in operation as of June 1945. This is twenty more than was listed in the June 1944 reprint.

Twenty-five states now have one or more voluntary prepayment medical care plans in operation. These are Alabama, California, Colorado, Connecticut, Delaware, Iowa, Kansas, Louisiana, Massachusetts, Michigan, Missouri, Nebraska, New Jersey, New Hampshire, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, Texas, Virginia, Washington, West Virginia and Wisconsin.

The plans vary widely in some ways and yet, surprisingly enough, are quite similar in their basic characteristics. They vary widely in the areas covered. There are county plans, city plans, area plans and state plans. They vary considerably in the benefits provided to subscribers. Mostly they provide only in-hospital surgical and obstetric coverage, although benefits for x-ray and anesthesia are frequently included. A small number of plans include all services, medical and surgical, in or out of the hospital. A fairly recent benefit which is increasing in popularity is in-hospital medical care. This benefit does not start until after several days have elapsed and continues at a per diem rate for a period of from one to two and a half months.

The plans are similar in that all have a free choice of physician and that all are voluntary and with few exceptions include the entire family. The principle of allowing subscribers to continue the contract after leaving the group has been generally accepted. In such instances the premiums are paid at less frequent intervals, i. e. quarterly or semiannually. Waiting periods have become fairly well standardized and include from nine to twelve months for maternity cases and one year for tonsillectomies. A preexisting condition clause is found in some contracts.

The most popular type of plan is a combination service-indemnity plan in which subscribers earning less than a given amount may not be charged an additional fee by the doctors. When the subscribers' earnings are more than the stated income limit, the doctor is free to make an additional charge. There are, however, a number of exceptions to the combination type plan. On the one extreme are the Washington state plans (or bureaus, as they are termed), which offer a complete coverage with no income limits, and on the other extreme are the straight cash indemnity plans, such as Ohio Medical Indemnity, Inc.

The relationship with Blue Cross Hospital Plans has been the subject of much discussion pro and con. The tendency in most areas is to work with Blue Cross, particularly in administration. Thirty-one of the fifty-three plans are coordinated with Blue Cross hospital plans. Eight of these are operated under single boards of trustees, and the hospital service corporation offers both contracts. In other words, there is really no medical plan but rather a hospital plan offering medical coverage.

In the remaining twenty-three plans the medical and hospital groups have separate corporations each controlled by their respective professions. Here the hospital plan participates in or handles entirely the administration, usually on a contract basis.

The year 1945 has given a tremendous impetus to the voluntary prepayment medical care plan movement. Fifteen new plans were started, with practically no two alike in any but the basic characteristics. Other plans are in the making and will be started in 1946.

A year ago a general pattern for plans seemed to have been set. However, the fifteen new plans formed in 1945 have brought forth a number of new ideas with which to experiment, not experiment as to the actuarial soundness of given premiums and benefits but experiment as to underwriting, as to control and as to administration features. The big problem now is to devise a means for determining the success of the various experiments, get cooperation in gathering information from the plans and provide some central unit or authority to correlate the program in general.

Indiana Adopts Medical Insurance Plan

After three years of study and discussion by the Indiana State Medical Association, the house of delegates has authorized the creation of a nonprofit mutual indemnity insurance company.

The company will bear the name "Mutual Medical Insurance, Inc." and will be organized under the Indiana statutes. It is planned to offer a limited medical and a surgical coverage on a group basis.

The plan will be financed by contributions from physicians and other interested groups. The required paid in capital is $65,000; of this sum $25,000 must be deposited with the state department of insurance. The remainder will be available for organizing and operation expenses.

The board of directors consists of the following physicians:

I. C. Barclay, Evansville
James H. Crowder, Sullivan
A. P. Hauss, New Albany
C. F. Overpeck, Greensburg
A. M. Mitchell, Terre Haute
W. U. Kennedy, New Castle
Cyrus J. Clark, Indianapolis
E. H. Clauser, Muncie
J. E. Ferrell, Fortville
Wemple Dodds, Crawfordsville
William H. Howard, Hammond
C. S. Black, Warren
A. Jerome Sparks, Fort Wayne
Alfred Ellison, South Bend
Walter L. Portteus, Franklin
F. S. Crockett, Lafayette
M. R. Lohman, Fort Wayne
F. T. Romberger, Lafayette

Washington Letter

(From a Special Correspondent)

March 25, 1946.

Doctors Named to Veterans Administration Staff

Two assistant administrators and five specialists have bee appointed to the Veterans Administration medical staff, Dr. Pa R. Hawley, medical director, announced. Dr. J. C. Harding o Washington will be assistant medical director for auxiliary services, and Dr. M. M. Fowler of Chevy Chase, Md., will b assistant medical director for dental services. Five physician named as part time chiefs of sections in the professional service division are Brig. Gen. James S. Simmons, who directs th Army's preventive medicine program, tropical medicine; Dr Albert M. Snell of the Mayo Clinic, gastroenterology; Dr Charles C. Wolferth, University of Pennsylvania Hospital cardiology; Dr. Harry L. Alexander, Washington University School of Medicine, allergy; Dr. James H. Maxwell, University of Michigan Medical School, otolaryngology. The Veterans Administration has ordered an acceleration in hospital construction to relieve a current shortage of beds in veterans' hospitals The agency has called for 1,500 rehabilitation specialists to aid in a medical program of education and shop training for veterans' hospitals. Dr. Donald A. Covalt, assistant director for medical rehabilitation, hopes to provide training for 5,000 persons in reconditioning and convalescent programs.

Approval of Mental Health Bill Asked by Senator Pepper

Senator Pepper, Democrat of Florida, is pushing for a favorable report by the Senate Education and Labor Committee on legislation to inaugurate a nationwide attack on mental disease problems. He plans to urge larger appropriations than those advocated by the House, $4,500,000 for a Mental Health Institute at Bethesda and $10,000,000 for research work and aid to the state. Senator Pepper favors a $10,000,000 outlay for the center, since Surgeon General Parran revealed that the $4,500,000 estimate was based on prewar costs. Congressman Priest, Democrat of Tennessee, introduced the bill after it was reported that half of all United States hospital beds are occupied by mental patients.

Senator Calls for Five Year Health Program

Senator Murray, Democrat of Montana and chairman of the Senate Education and Labor Committee, advocated a five year health program for America, stating that "the time has come to stake out long-range health goals for America's future." He announced that he had asked the American Medical Association and the American Dental Association and some 180 other organized groups in the health field for opinions of what should be "specific health goals" for the next five years. Senator Murray will open hearings April 2 on proposed legislation for national health insurance, which contemplates prepayment of medical and hospital costs.

Food Shortage Expected to Last Another Year

A Department of Agriculture official reports that the food shortage "will be with us into the 1947 harvest," confirming claims of retiring director general Herbert Lehman of UNRRA. The Agriculture spokesman denied that food officials had taken the stand that food supply problems would end with the beginning of the 1946 harvest. Asked at his press conference about Mr. Lehman's suggestion that the nation return to wartime food rationing, President Truman said he would not object if this should prove necessary, but he hoped that it could be avoided

Warning by Secretary of State that Draft Must Be Extended

Secretary of State James F. Byrnes told the Senate Military Affairs Committee that the security and welfare of the country will be at stake if the Draft Act, scheduled to expire on May 15, is not renewed. Warnings of dangers in depletion of the armed forces were also given by Army Chief of Staff Eisenhower and War Secretary Patterson.

Amputees Assured That They Will Get Cars

Assurances were given from two quarters that amputees would be provided with automobiles, as requested by a group of them here recently. Congressman Rogers, Republican of Massachusetts, said that she will sponsor legislation to buy cars for amputees if the Veterans Administration refuses to provide them. Miss Dorothy Frooks, New York lawyer, in talking with a six man war amputee car committee at Forest Glen Sanitarium of Walter Reed Hospital, said that Public Law 16 provides that any disabled veteran is entitled to equipment for "employability." Col. Wallace H. Graham, personal physician to President Truman, promised to communicate Miss Frooks's interpretation of the law to the President, who has been concerned over this phase of amputee problems.

Plan to Reduce Fatal Accidents

The Federal Interdepartmental Safety Council submitted to President Truman a plan to extend safety measures to all federal departments and agencies in the hope of cutting down accidents which cost 2,852 lives in five and a half years. The plan was approved at a meeting of 100 agency representatives. It provides for a minimum expenditure of $3 per employee annually to set up safety activities.

Cattle Vaccine to Improve Food Supply

Development of a vaccine to protect cattle against rinderpest, or cattle plague, reported by a United States-Canadian commission, is expected to improve the world food supply. Although the disease does not prevail here, it is virulent in the Orient, and a million doses of the vaccine have been turned over to the United Nations Relief and Rehabilitation Administration to be shipped to China.

Possibility of Preventing Outbreak of Malaria

Dr. Daniel L. Seckinger, assistant medical officer of the District of Columbia, states that, despite the presence in Washington of returned soldiers who carry the malaria parasite, an outbreak of malaria can be avoided by proper precautions. "There may be some cases this summer, but there should be no epidemic," he said.

Retirement of Lehman from UNRRA Because of Ill Health

Herbert T. Lehman, former governor of New York, has had to resign as director of the United Nations Relief and Rehabilitation Administration because of ill health. He has worked hard and untiringly to make a success of the world relief organization.

Truman Names April "Cancer Control Month"

President Truman has proclaimed April "Cancer Control Month." Calling on the American people for a concerted effort to eradicate cancer, he said that cancer took a toll of 170,000 lives last year and that "a large percentage of deaths from cancer can be prevented if the disease is discovered and treated in its early stages."

End of Army Specialized Training Program at Georgetown

Graduation exercises at Georgetown University School of Medicine signalized the formal closing there of the Army Specialized Training Program. Georgetown set up a model system that was adopted by the Army throughout the country.

Praise for Government Research Work

Dr. Cora Dubois of the State Department's Office of Research and Intelligence told the Anthropological Society of Washington that "our government pursues research on a scale and of a quality unsuspected by many of us before we came down here."

Speedy Passage Asked for Washington Slum Clearance Bill

John Ihlder, executive director of the National Capital Housing Authority, has asked for speedy House passage of a $20,000,000 slum clearance bill for the nation's capital.

Zoning Laws May Be Lifted to Aid Doctors

Washington doctors returning from military service who have been unable to find office space may get relief through a proposed amendment to strict District of Columbia zoning regulations to permit doctors and dentists to open offices in residential areas.

Coming Medical Meetings

Aero Medical Association, Chicago, April 7-9. Dr. David S. Brachman, 1016 Dime Building, Detroit 26, Secretary.

Alabama, Medical Association of the State of, Birmingham, April 16-18. Dr. Douglas L. Cannon, 519 Dexter Ave., Montgomery 4, Secretary.

American Association of Anatomists, Cleveland, April 4-6. Dr. Eliot R. Clark, University of Pennsylvania School of Medicine, Philadelphia 4, Secretary.

American College of Physicians, Philadelphia, May 13-17. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Executive Secretary.

American Pediatric Society, Skytop, Pa., May 1-3. Dr. Hugh McCulloch, 325 N. Euclid Ave., St. Louis 8, Secretary.

American Gastro-Enterological Association, Atlantic City, May 24-25. Dr. J. Arnold Bargen, 102 Second Ave., S. W., Rochester, Minn., Secretary.

American Society for Research in Psychosomatic Problems, New York, May 11-12. Dr. Edwin G. Zabriskie, 714 Madison Ave., New York 21, Secretary.

American Surgical Association, Hot Springs, Va., April 2-4. Dr. Warfield M. Firor, Johns Hopkins Hospital, Baltimore 5, Secretary.

Arizona State Medical Association, Phoenix, May 2-3. Dr. Frank J. Milloy, 112 N. Central Ave., Phoenix, Secretary.

Arkansas Medical Society, Little Rock, April 14-15. Dr. W. R. Brooksher, 602 Garrison Ave., Fort Smith, Secretary.

California Medical Association, Los Angeles, May 7-10. Dr. George H. Kress, 450 Sutter St., San Francisco 8, Secretary.

Central States Dermatological Society, Detroit, April 27. Dr. Clarence E. Reyner, Henry Ford Hospital, Detroit, Secretary.

Connecticut State Medical Society, Hartford, May 1-3. Dr. Creighton Barker, 258 Church St., New Haven 10, Secretary.

Florida Medical Association, Jacksonville, April 22-24. Dr. Robert B. McIver, P. O. Box 1018, Jacksonville, Secretary.

Georgia, Medical Association of, Macon, May 7-10. Dr. Edgar D. Shanks, 478 Peachtree St., N.E., Atlanta, Secretary.

Illinois State Medical Society, Chicago, May 14-16. Dr. Harold M. Camp, 224 S. Main St., Monmouth, Secretary.

Iowa State Medical Society, Des Moines, April 17-19. Dr. John C. Parsons, 406 Sixth Ave., Des Moines 9, Secretary.

Kansas Medical Society, Wichita, April 22-25. Dr. F. R. Croson, 112 W. Sixth St., Topeka, Secretary.

Louisiana State Medical Society, Alexandria, May 6-8. Dr. P. T. Talbot, 1430 Tulane Ave., New Orleans 13, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 23-24. Dr. W. Houston Toulson, 1211 Cathedral St., Baltimore 29, Secretary.

Massachusetts Medical Society, Boston, May 21-23. Dr. Michael A. Tighe, 8 Fenway, Boston, Secretary.

Minnesota State Medical Association, St. Paul, May 20-22. Dr. B. B. Souster, Lowry Medical Arts Bldg., St. Paul 2, Secretary.

Mississippi State Medical Association, Jackson, May 14-15. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

Nebraska State Medical Association, Lincoln, May 6-9. Dr. R. B. Adams, 416 Federal Securities Bldg., Lincoln 8, Secretary.

New Hampshire Medical Society, Manchester, May 14. Dr. C. R. Metcalf, 5 S. State St., Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, May 21-23. Dr. Alfred Stahl, 55 Lincoln Park, Newark, Secretary.

New Orleans Graduate Medical Assembly, New Orleans, April 1-4. Dr. Joseph S. D'Antoni, 1430 Tulane Ave., New Orleans 13, Secretary.

New York, Medical Society of the State of, New York, April 29-May 3. Dr. Walter P. Anderton, 292 Madison Ave., New York 17, Secretary.

North Carolina, Medical Society of the State of, Pinehurst, May 1-3. Dr. Roscoe D. McMillan, P. O. Box 232, Red Springs, Secretary.

Northern Tri-State Medical Association, South Bend, Ind., April 9. Dr. John L. Stifel, 232 Michigan St., Toledo 2, Secretary.

Ohio State Medical Association, Columbus, May 7-9. Mr. Charles S. Nelson, 79 E. State St., Columbus, Executive Secretary.

Postgraduate Institute of the Philadelphia County Medical Society, Philadelphia, April 9-12. Dr. George P. Muller, 301 S. 21st St., Philadelphia, Director.

Rhode Island Medical Society, Providence, May 15-16. Dr. William P. Buffum, 122 Waterman St., Providence 6, Secretary.

South Carolina Medical Association, Greenville, April 30-May 2. Dr. Julian P. Price, 105 W. Cheves St., Florence, Secretary.

Tennessee State Medical Association, Knoxville, April 9-11. Dr. W. M. Hardy, 706 Church Street, Nashville, Secretary.

Texas, State Medical Association of, Galveston, May 6-9. Dr. Holman Taylor, 1404 W. El Paso St., Fort Worth 3, Secretary.

West Virginia Medical Association, Huntington, May 13-15. Mr. Charles Lively, P. O. Box 1031, Charleston 24, Executive Secretary.

Southwest Allergy Forum, Houston, Texas, April 8-9. Dr. Albert H. Braden, 1704 Crawford St., Houston, Secretary.

Society of American Bacteriologists, Detroit, May 21-24. Dr. Leland W. Parr, 1335 H St., N. W., Washington 5, D. C., Secretary.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH)

ALABAMA

State Medical Meeting.—The Medical Association of the State of Alabama will hold its 1946 session at the Thomas Jefferson Hotel, Birmingham, April 16-18 under the presidency of Dr Walter F Scott, Birmingham, and with the Jefferson County Medical Society acting as host Among the speakers will be

Dr Edgar Burns New Orleans, Clinical Importance of Congenital Anomalies of the Urinary Tract
Dr J Brown Farrior, New Orleans, A Critical Analysis of the Fenestration Operation
Major Frederic T Becker, M C Memphis, Tenn , Cutaneous Eruptions Frequently Seen in Eye, Ear, Nose and Throat Practice
Dr Lawson Thornton, Atlanta, Ga , Injuries to the Hip
Col James B Brown, M C , New Orleans, Military Plastic Surgery
Dr Champ Lyons, New Orleans, Chronic Shock—Its Diagnosis and Treatment
Edwin F Stegen, Chicago, Showdown on Political Medicine

There will be many Alabama physicians on the program On Tuesday a special ceremony will be held in the auditorium of Hillman Hospital to present to the Medical College of Alabama portraits of Chauncey Sparks, governor of Alabama, and Dr William D Partlow, Tuscaloosa, chairman of the "Four Year Medical School" of the state medical association, in appreciation of their services toward procuring the Medical College of Alabama On Wednesday Dr Alton Ochsner, New Orleans, will deliver the Jerome Cochran Lecture on "The Significance of Incidental Observations in the Progress of Medicine "

ARKANSAS

Physician Honored.—Dr Merrieman L Norwood, Lockesburg, was given a dinner by the Arkansas Medical Society to honor his many years' service to the profession Dr Norwood, who is a senior in the list of living past presidents of the state society, was presented with a watch as a memento of the occasion

State Medical Meeting.—The seventieth session of the Arkansas Medical Society will be held at the Hotel Marion, Little Rock, April 15-17, under the presidency of Dr Davis W Goldstein, Fort Smith, who will speak on "The Physician's Responsibility in Venereal Disease Control " Among the out of state speakers will be

Dr Howard R Mahorner, New Orleans Surgical Experience with Vascular Diseases of the Lower Extremities
Dr Walter C Alvarez Rochester Minn What is Wrong with the Dyspeptic Whose Findings are all Negative
Dr Lee De Cady St Louis, The Development of Prepaid Medical Service in the United States
Dr Herbert R Edwards, New York, Trends in Tuberculosis Control Procedures
Dr Wiley R Buffington, New Orleans, Detached Retina
Mr George B Larson, Chicago, Lay Cancer Education and the Physician
Dr Roland M Klemme, St Louis, Surgical Treatment of Parkinson's Disease
Dr Hardy A Kemp Detroit, The Michigan State Medical Society's Plan for Providing Practice Arrangements with Beneficiaries of the Veterans Administration

CALIFORNIA

Carl Schmidt Dies.—Carl L A Schmidt, Ph D , professor of biochemistry and chairman of the division, University of California Medical School, Berkeley, from 1924 to 1944, when he retired, died February 23, aged 60

Borden Award Given to Student.—Robert O Scow, Avenal, has been presented the annual Borden undergraduate research award of $500 by unanimous choice of the research committee of the University of California Medical School The award, financed by the Borden Foundation, is made annually to a graduating senior for research which is deemed most meritorious (THE JOURNAL, Dec 22, 1945, p 1218) Dr Scow led or participated in research which has resulted in the publication of ten scientific papers The research committee commended Scow for remarkable ingenuity in research

Applications for Licensure for 1945—During the year 1945 there were 1,926 applications filed for the various types of certificates issued by the California State Board of Medical Examiners, of this number 1,704 were for physicians and surgeons certificates The number of applications filed for written examination showed a slight increase over the previous year while the number of reciprocity applicants who based their applications on a license issued by another state, national board credentials or commissions in the United States Army, Navy or Public Health Service showed an increase of 528, or nearly twice the number filed in 1944 The number of certificates issued in 1945 of all types totaled 1,419, of this number 1 208 were physicians and surgeons certificates, 599 were issued by reciprocity to applicants who based their applications on a license issued by some other state, 98 were issued on national board credentials and 11 were issued on government credentials On Dec 31, 1945 there were 641 applications of all classes on file and awaiting final disposition in 1946

CONNECTICUT

State Medical Meeting—The Connecticut State Medical Society will hold it 154th meeting in Hartford, May 1-3, under the presidency of Dr Joseph H Howard, Bridgeport Among the speakers will be

Dr Perrin H Long Baltimore, Medical Progress and Medical Education During the War
Col James C Harding, M C , Washington, The Place of Civilian Physicians in the Medical Care of Veterans
Dr Dean A Clark, New York, Voluntary Health Insurance Plans
Dr James A Shannon, New York, Malaria
Dr Chester S Keefer Boston, The Clinical Use of Penicillin and Streptomycin
Dr Oliver Cope, Boston, Thyroid Lumps
Dr Isidor S Ravdin, Philadelphia Protein Deficiencies
Dr William Dock, Brooklyn, The Value and Hazards of Complete Bed Rest
Dr J Burns Amberson Jr , New York Chronic Nontuberculous Pulmonary Disease Clinical Principles Useful in Diagnosis and Treatment

Features of the meeting will include a symposium on the hospital as a public service unit with Dr Louis P Hastings Hartford, presiding, and a symposium on diseases of the blood with Dr Harold M Marvin, New Haven, presiding and the following speakers

Dr William B Castle, Boston, Physiology of Blood Diseases, with Particular Reference to the Mechanism of Therapy
Dr Paul Reznikoff New York, Practical Aspects of the Treatment of Hematologic Conditions
Dr Wyman Richardson Boston The Selection, Interpretation and Limitations of Laboratory Procedures in Hematology

INDIANA

Advisory Health Council—The Indiana Advisory Health Council, comprising forty five members appointed by the governor, was created by the 1945 legislature The council is representative of various organizations throughout the state At its first meeting in Indianapolis Dr Harry P Ross, Richmond was chosen chairman, Howard H Sweetman, Indianapolis, vice chairman and Mrs George D French, Indianapolis, secretary

Dr. Damon In Charge of State Laboratories—Samuel R Damon, Ph D , director of the bureau of laboratories of the Alabama State Department of Health, has been appointed head of the laboratories of the Indiana State Board of Health to fill the vacancy created when Dr Clyde G Culbertson, Indianapolis resigned to take a position with Eli Lilly and Company (THE JOURNAL, March 9, p 657) Dr Damon received his Ph D at Brown University, Providence, R I He once was a member of the Rhode Island State Department of Health and also of the Johns Hopkins University School of Hygiene and Public Health Baltimore

IOWA

State Medical Meeting.—The ninety fifth session of the Iowa State Medical Society will be held at the Hotel Fort Des Moines, April 18-19, under the pres dency of Dr Ransom D Bernard, Clarion Among the speakers will be

Dr William S Middleton, Madison, Wis , Infectious Hepatitis
Dr Henry L Williams, Rochester, Minn Diagnosis, Cause and Treatment of Endolymphatic Hydrops (Meniere's Disease)
Dr Henry H Searls, San Francisco War Wounds of the Abdomen
Dr William A O'Brien Minneapolis Recent Developments in H pital Organizations and Medical Practice That May Affect the Future
Dr Frank L Feierabend, Kansas City, Mo , The Doctor s Role in the Postwar World
Major Gen Paul R Hawley, M C , Veterans Administration Prog

The program will also include a series of section meetings to be addressed, among others, by Drs Oscar T. Clagett, Rochester, on "Lung Resection in Pulmonary Tuberculosis" and Sumner Cohen, Oak Terrace, Minn , 'Tracheobronchial Tuberculo " Other groups meeting will be the Iowa Pathological Society, the State Society of Iowa Medical Women, Iowa Medical Service and the Woman's Auxiliary of the state medical society The Iowa Anesthesiological Association will be addressed by Dr Ralph T Knight, Minneapolis, on "Economics of Anesthesiology "

MAINE

Personal.—Dr. James W. Loughlin, Newcastle, for many years district health officer for District 111, comprising Kennebec, Knox, Lincoln, Sagadahoc and Waldo counties, has retired.——Dr. Delmer A. Craig has resigned as medical director of the Eastern Maine General Hospital to become associated with Charles F. Neergaard, consultant in hospital planning, organization and management, New York.

MARYLAND

Hospital Survey.—Dr. Walter D. Wise, professor of surgery, University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, has been appointed chairman of a new hospital survey committee named by the committee on medical care of the Maryland State Planning Commission.

Health Officer for Forty-Four Years.—Dr. Isaac N. King, deputy state and health officer of Calvert County, resigned February 1, ending some forty-four years' service with the state department of health. Dr. King had been health officer of Calvert County since 1902 and deputy state health officer since 1924. Dr. King, who is president of the Medical and Chirurgical Faculty of Maryland, has been succeeded by Dr. Hugh W. Ward, Owings, as deputy and health officer of Calvert County. Other changes in the department include the reinstatement of Dr. Edward Davens, Baltimore, as chief of the bureau of child hygiene, state department of health, and the reinstatement of Dr. Theodore R. Shrop as deputy state and health officer of Howard County, according to the *Maryland Health Bulletin.*

MINNESOTA

The Judd Lecture.—The thirteenth E. Starr Judd Lecture will be given by Dr. Samuel C. Harvey, William H. Carmalt professor of surgery at Yale University School of Medicine, New Haven, April 15, in the Medical Science Amphitheater. His subject will be "The Healing of the Wound." The late E. Starr Judd, an alumnus of the Medical School of the University of Minnesota, established this annual lectureship in surgery a few years before his death.

MONTANA

Miscellaneous Activities.—Dr. Eugene Hildebrand Jr., formerly of Chicago, is now pathologist and director of laboratories of the Great Falls Clinic, the *Journal Lancet* reports.——The Montana Physicians' Service has been organized on a nonprofit basis to provide the people of Montana with medical care on a budget basis, with Dr. Maurice A. Shillington, Glendive, as president. The service will work in cooperation with the Montana Blue Cross hospitalization organization. The service was set up with the assistance of Dr. Chester L. Cooley, president of the San Francisco County Medical Society and board secretary of the California Physicians' Service. The new group will cooperate with the California service in the veterans' medical care program.

NEW JERSEY

Fredrick Yonkman Named Research Director.—Dr. Fredrick F. Yonkman, chief pharmacist of Ciba Pharmaceutical Products, Inc., Summit, has been appointed director of research for the organization. Dr. Yonkman was formerly professor of pharmacology and therapeutics at Wayne University College of Medicine, Detroit.

NEW YORK

Nutrition Council Urged.—Creation of an adequately financed state nutrition council to coordinate the work of all state departments in the field of nutrition and encourage research and educate the public on the subject was asked March 1 in a report of the joint legislation committee on nutrition, according to the New York *Times.*

New Health Officer in Rochester.—Dr. Robert S. Westphal, Batavia, has resigned as district health officer to become deputy health officer of Rochester, according to newspaper reports. Dr. Westphal will succeed Dr. Burtis B. Breese, who resigned as city health officer to enter private practice. The new appointment will be effective about April 15.

Allergy Group Formed.—On February 1 a group of sixteen physicians met at the Rochester Academy of Medicine to form what will probably be known as the "Section on Allergy of the Rochester Academy of Medicine." Dr. Stearns S. Bullen was elected chairman of the section and Dr. John M. Parker secretary-treasurer, both of Rochester. At a meeting Henry W. Scherp, Ph.D., Rochester, spoke on "Fundamental Immunological Conceptions in Allergy."

James Wilson Honored.—Dr. James R. Wilson, who left his medical activities in Syracuse to join the Americal Medical Association as Secretary of the Council on Foods and Nutrition, was given a farewell dinner February 15 by the Syracuse Children's Bureau and friends and associates at Syracuse University College of Medicine, where he was associate professor of medicine. In addition to many gifts, Dr. Wilson received a typewriter and a scroll signed, among others, by Dr. Herman G. Weiskotten, dean of the medical school; Dr. Leon E. Sutton, Syracuse, and Dr. John A. Root, Clyde, who is succeeding Dr. Wilson as medical adviser at the Children's Bureau.

"Screening" Examinations for Cerebral Palsy Patients.—On March 11 preliminary "screening" examinations were to begin in Strong Memorial Hospital, Rochester, the first step in the development of a Cerebral Palsy Clinic to be formed by the Strong Memorial Hospital and the Rochester Municipal Hospital (The Journal, February 2, p. 296). In connection with the project a Cerebral Palsy Association was established by a group of parents. Press reports indicate that the formal clinic has not been organized for treatment but will be started later "in a modest way." Under present plans, successive Monday afternoons will be devoted to preliminary examinations of child sufferers for classification and determination of the severity of the disease. The association, through its secretary, Mrs. Herbert C. Soule Jr., Rochester, is arranging appointments for 5 children each Monday, and these schedules will be used at the hospital. After the preliminary examinations have been made, the clinic will be set up in Municipal Hospital, where the permanent treatment center will be located. The treatment department will accommodate 10 hospitalized patients in addition to the ambulatory cases. Physicians from the pediatric, orthopedic, psychiatric and neurologic divisions of Strong Hospital will participate. Under the clinic setup, it is planned, parents will be given instructions for home treatment to follow the specialized therapy at the clinic. The clinic will be supported in part by the state health department and by such special groups as the Elks who have contributed funds. Space for the clinic will be donated by Municipal Hospital.

New York City

Officers of Spanish Speaking Group.—Dr. Jacob M. Gershberg continues as president of the International and Spanish Speaking Association of Physicians, Dentists and Pharmacists for 1946. Among other officers are Dr. Milton B. Plotz, Brooklyn, executive secretary; Dr. William B. McDonough, general secretary, and Dr. Frederick S. Aron, treasurer.

Forum on the Hippocratic Oath.—Dr. Carl A. L. Binger gave the first of a series of forum lectures sponsored by the division of social philosophy of Cooper Union February 5. His topic was "The Doctor's Job." The forum, under the general title of "The Hippocratic Oath," is being given on Tuesday evenings through April 23. Other speakers include:

Dr. Louis H. Schwartz, February 26, The Eye as an Index of Health.
Dr. Ernst P. Boas, March 5, Middle Age: The Test of Modern Medicine.
Dr. Walter Modell, March 12, The New Drugs.
Dr. Norman H. Jolliffe, March 26, Nutrition Comes to the Aid of Medicine.
Dr. Thomas A. C. Rennie, April 2, Mental Illness.
Dr. Stewart Wolf Jr., April 9, Psychosomatic Medicine.
Dr. Leopold Brahdy, April 16, Industrial Medicine.
April 23, not announced.

Regents Rule on Medical and Dental Schools Merger.—The state board of regents ruled February 15 that the merger of the medical and dental schools of Columbia University was "a matter of internal concern for the university itself," in which the board had interest only if courses should fall below prescribed standards, according to the New York *Times.* The case was closed on the recommendation of the board's committee on administration, which conferred with officers of the state dental society, who had requested an investigation of circumstances surrounding the merger of the College of Dental and Oral Surgery and the College of Physicians and Surgeons. In submitting its request the society had cited the fact that the Columbia Dental School had been removed by the New Jersey Board of Registration and Examination from its list of approved schools. The merger of the two schools was reported in The Journal, March 10, 1945, page 606.

Eye and Ear Infirmary Joins Proposed Medical Center.—The New York Eye and Ear Infirmary, said to be the oldest hospital of its kind in North America, voted February 27 to join the New York University-Bellevue Medical Center plan for the Bellevue area (The Journal, Dec. 29, 1945, p. 1277). The infirmary will retain its identity under the new arrangement but will occupy a section of the new University Hospital when completed. The infirmary is now housed in a half century old brownstone building at Second Avenue and Thirteenth Street.

The New York Eye and Ear Infirmary was founded in 1820 and is the third oldest hospital of any kind in the city. The founders, Edward Dilafield and John Kearny Rodgers, were inspired by the work of the Royal London Ophthalmic Hospital while studying abroad. On their return they organized the infirmary "to contribute toward the relief of the poor who by a diseased state of one of the most important organs in the human body are deprived of the means of gaining a livelihood."

Grant for Tropical Disease.—The Marcelle Fleischmann Foundation has made a grant of $20,000 a year for a ten year period to the department of public health and preventive medicine of Cornell University Medical College for the study of tropical disease. The specified purpose of the gift is to promote the study of immunologic and allergic manifestations of exotic diseases and to provide for a better understanding of their prevention and treatment. The investigations at Cornell will be under the direction of Morton C. Kahn, Sc.D., associate professor of public health and preventive medicine at Cornell. The Marcelle Fleischmann Foundation is a philanthropy that has been founded recently by Mr. E. M. Fleischmann, Baltimore, in memory of his late wife. This gift was announced in a convocation in the auditorium of Cornell, February 8. A portrait of Marcelle Fleischmann was unveiled at these exercises, and the researches to be conducted under the grant were dedicated to her memory. Mr. Fleischmann made an address in which he presented the grant and indicated the purposes for which it is given.

NORTH CAROLINA

New Industrial Head.—Dr. Otto J. Swisher Jr. has been appointed director of the division of industrial hygiene of the North Carolina State Department of Health, succeeding Dr. Charles B. Davis Jr., Wilmington, resigned. Dr. Swisher, prior to his entry in military service, from which he was recently released, served as director of the division of industrial hygiene of the West Virginia State Board of Health and as health officer of Covington, Tenn.

W. T. Sanger Named Head of Hospital Survey.—William T. Sanger, LL.D., Richmond, Va., president of the Medical College of Virginia, was recently elected president of a special national committee chosen by the North Carolina Medical Care Commission to make a survey of hospital facilities to determine the best location for the proposed expanded medical school and hospital of the University of North Carolina. Other members of the committee include:

Graham Davis, Battle Creek, Mich., hospital director of the Kellogg Foundation.

Dr. John A. Ferrell, New York, medical director of the John and Mary Markle Foundation.

Dr. Hugh R. Leavell, New York, assistant director for medical sciences, Rockefeller Foundation.

Dr. Samuel Proger, Boston, Joseph H. Pratt Diagnostic Hospital.

Dr. Eugene L. Bishop, Chattanooga, Tenn., director of health for the Tennessee Valley Authority.

Dr. Victor Johnson, Chicago, Secretary, Council on Medical Education and Hospitals of the American Medical Association.

OHIO

Strauss Memorial Fund.—Announcement has been made of the creation at Mount Sinai Hospital, Cleveland, of a fund in memory of Dr. Abraham Strauss, late chief of staff in surgery. The fund will be used to provide fellowships for advanced surgical training, a cause which was close to the heart of Dr. Strauss.

Medical Officers of World War II.—The Association of Medical Officers of World War II, incorporated by physicians of Toledo, now has eighty-eight members, all of whom are affiliated with the Academy of Medicine of Toledo and Lucas County. Officers include Dr. Aaron D. Vogelsang, president; Dr. Edouard E. Lyon, vice president; Dr. Richard Hotz, secretary, and Dr. Hazen L. Hauman, treasurer, all of Toledo. It is hoped to make the membership national.

Community Health Festivals.—The Cleveland Health Council, the Anti-Tuberculosis League and the Goodrich Social Settlement House sponsored the second in a series of community health festivals, February 26-28. Twenty organizations displayed health exhibits at a health fair in addition to miscellaneous entertainment. Afternoon sessions were devoted to health in the home, health in the schools and health in the community. Speakers in the evening included Dr. Henry C. Schumacher, Cleveland, Healthy Minds; Dr. Joseph B. Stocklen, Cleveland, How to Keep Well, and Dr. Charles F. McKhann, Cleveland, Health in Growing Children.

War Story Contest.—Members of the Academy of Medicine of Cleveland who served in any branch of the armed services during World War II are invited to submit compositions for a literary contest. Material may relate any experience or event of the author's service. The prizes which are offered by the Bulletin of the academy include a first prize of $50, second prize $15, third prize $10 and honorable mention comprising five prizes of $5. Manuscripts must be in English, typewritten, double spaced and ranging from 750 to 1,000 words. All entries must be submitted to the editor of the Bulletin by May 15. The editorial staff of the Bulletin will be the judges.

PENNSYLVANIA

Charles Crampton Named Deputy Secretary of Health.—Dr. Charles H. Crampton, Harrisburg, has been appointed by Gov. Edward Martin as deputy secretary of health. His appointment brings to three the number of deputy secretaries, the others being Carl C. Tinstman, administrative deputy, and Dr. J. M. Campbell, Harrisburg, medical deputy.

Allen Cowley Wins Seibert Award.—Dr. Allen W. Cowley, Harrisburg, was recently presented with the Seibert Memorial Award, given biennially by the Harrisburg Academy of Medicine. The $500 award is a memorial to the late Dr. William Henry Seibert, who served as the first president of the academy and is made to a physician under 45 who has "preeminently distinguished himself in his profession and whose life as a citizen and scholar has been broad, unselfish and exemplary."

Personal.—Dr. Irene F. Laub, Easton, was elected president of the Northampton County Medical Society recently, the first woman to hold this position in the society.——Dr. Harold K. Hogg, Lancaster, has been named executive secretary of the Lancaster Board of Health, succeeding Dr. Joseph Appleyard, resigned.——Dr. Charles H. Witmer, Lancaster, a member of the St. Joseph's Hospital staff since 1912, has been appointed medical director of the hospital to succeed Dr. John L. Atlee, Lancaster, who resigned after eight years in the position.

Ophthalmologic Meeting.—The Pennsylvania Academy of Ophthalmology and Otolaryngology will hold its annual meeting at the Merion Golf Club, outside of Philadelphia, April 24-25. Among the speakers will be:

Dr. James N. Greear Jr., Washington, D. C., Some Interesting Phases of War Ophthalmology.

Dr. Chevalier L. Jackson, Philadelphia, Pan American Otolaryngology.

Dr. Walter S. Atkinson, Watertown, N. Y., Anesthesia in Ophthalmology.

Dr. Walter I. Lillie, Philadelphia, Retinal Arteriolar Sclerosis.

Dr. Robin C. Buerki, Philadelphia, Contemporary Medical Problems.

Capt. Fred Harbert, Philadelphia, Symposium on the Hard of Hearing.

Philadelphia

Health Institute.—The Woman's Auxiliary of the Philadelphia County Medical Society will hold its sixteenth health institute in the auditorium of the society on April 9. The theme of the meeting will be "Health in the Postwar Era." Among the speakers will be:

Dr. Lewis C. Scheffey, president of the county society.

Dr. Margaret D. Craighill, Experiences in World War II.

Dr. Oliver Spurgeon English, The Role of Psychiatry in a Permanent Peace.

Dr. William Harvey Perkins, The Future of Public Health.

Dr. Edward L. Bortz, The Atomic Bomb.

Dr. George Morris Piersol, The Future of Physical Medicine.

Dr. William G. Leaman Jr., Rheumatic Fever.

TEXAS

Allergy Forum.—The Southwest Allergy Forum will be held at the Rice Hotel, Houston, April 7-9. Among the speakers will be:

Dr. Paul D. Fleming, Houston, The Life Cycle of the Allergic Individual.

Dr. Frank R. Rugeley, Wharton, Allergic Causes of Pruritus Ani.

Dr. Theron G. Randolph, Chicago, Practical Aspects of Food Allergy.

Dr. Philip M. McNeill, Oklahoma City, Classification of Headaches, with Particular Reference to Management.

Dr. Paul T. Petit, Beaumont, Use of Sulfonamide Drugs in Prevention and Treatment of Infective Episodes in Bronchial Asthma.

Dr. Jesse B. Shelmire, Dallas, Contact Dermatitis.

Dr. Bayard T. Horton, Rochester, Minn., Histamine and Antihistamine Agents: Their Use in Clinical Medicine.

Dr. H. Whitney Boggs, Shreveport, La., Conditions Producing Dyspnea Which Have Been Diagnosed as Asthma.

In addition there will be round table discussions, and the guest speaker at the dinner will be Chauncey D. Leake, Ph.D., Dallas, on "The Pharmacology of Drugs Used in the Treatment of Allergy."

WISCONSIN

Gundersen Foundation to Award Scholarship.—The La Crosse Board of Education accepted the $300 annual scholarship award established by the Dr. Adolph Gundersen Memorial Foundation. The foundation was organized on Dec. 20, 1944 to enable members of the medical profession to further research and study. It was named in honor of the late Dr. Adolph Gundersen. The $300 scholarship is to be awarded annually in

June to the student graduating that year from a La Crosse high school who shall be judged by a committee representing teachers of science from the city high schools to be the leading student in sciences and the one most likely to make a contribution after college or university training in that field. Selection will be based on scholastic record in biology, chemistry and physics, standing in a science aptitude test and general ability in all subjects. Officers of the foundation are Dr. Sigurd Gundersen, president, Dr. Gunnar Gundersen, vice president, M. P. Jonsrud, secretary-treasurer, and Fred E. Steel and Dr. Alf H. Gundersen, directors.

ALASKA

Territorial Election.—Dr. Paul B. Haggland, Fairbanks, has been named president-elect of the Alaska Territorial Medical Association and Dr. Arthur N. Wilson, Ketchikan, installed as president. Other officers are Dr. Dwight L. Cramer, Ketchikan, vice president, and Dr. William P. Blanton, Juneau, secretary treasurer.

HAWAII

Clarence Carpenter Dies.—Clarence W. Carpenter, M.S., pathologist for the Hawaiian Sugar Planters' Association Experimental Station, Honolulu, died in Honolulu February 21, aged 58.

Territorial Journal Includes Nurses' Activities.—The *Hawaii Medical Journal,* the official publication of the Hawaii Territorial Medical Association, with the January-February issue became the official publication also of the Hawaii Territorial Nurses Association.

Personal.—Bernard Witlin, acting director of the bacteriologic laboratories of the Hawaii Board of Health, has resigned to accept a position with the Ohio State Health Department, Columbus, it is reported. Dr. Pauline G. Stitt, Buffalo, assistant director of the bureau of maternal and child health and crippled children, has resigned to become a regional medical consultant of the U. S. Children's Bureau for the southeastern section of the United States.——The title of Dr. Richard K. C. Lee, Honolulu, director of public health in the Territory, has been changed to assistant health executive in order to conform to the mainland practices, the Honolulu *Advertiser* reported recently.

Physicians Honored.—On December 7 Honolulu County Medical Society held a special meeting to honor sixty-five physicians from Hawaii who have been engaged in military service during the war. Seventeen of the group were present at the meeting. Each one was presented with a certificate from the society with the names of all the men surrounding a figure which symbolized the history of medicine in Hawaii. Floral leis symbolizing the "kindly aloha felt by all the civilian members toward their service brothers" were presented to the doctors who were honored on their return and to the following physicians who presented the program:

Comdr. Stanley J. G. Nowak (MC), Surgery of the Sympathetic Nervous System: Indications.

Lieut. Comdr. Samuel H. Gray (MC), Recurrent Acute Pancreatitis: Clinical Considerations.

Lieut. Comdr. Charles W. Peabody (MC), Internal Derangements of the Knee Joint: Types and Treatment.

Lieut. Comdr. Clayton B. Ethridge (MC), Acute Pericarditis Simulating Coronary Thrombosis: Differential Considerations.

GENERAL

Medical Golfing Association.—The American Medical Golfing Association will hold its thirtieth annual tournament at San Francisco Golf and Country Club, San Francisco, July 1. Dr. James W. Morgan, 384 Post Street, San Francisco, is chairman of arrangements for the San Francisco tournament. Applications for fellowship in the American Medical Golfing Association may be obtained by writing the secretary, Mr. William J. Burns, 2020 Olds Tower, Lansing 8, Mich.

Dr. Weaver Joins Infantile Paralysis Foundation.—Harry M. Weaver, Ph.D., senior administrative assistant and assistant professor of anatomy, Wayne University College of Medicine, Detroit, has been named assistant to the medical director of the National Foundation for Infantile Paralysis. Dr. Weaver's work will be with the foundation's research program and fellowship training program for physicians and research workers. Dr. Weaver received his Ph.D. at Ohio State University. He has been a member of the faculty of the Wayne University since 1938.

International Health Conference.—The Economic and Social Council of the United Nations Organization decided on February 15 to hold an international health conference in Paris beginning June 20, the New York *Times* reported. A special preparatory committee was going to Paris in a short time to prepare the agenda. The conference will consider the establishment of machinery for international action in the field of public health. The Soviet delegate in the council urged delaying the conference until 1947, but the United States, Britain and China declared that the question of world health constituted an urgent problem.

Narcotic Violations.—The U. S. Bureau of Narcotics, Treasury Department, Washington, D. C., has announced the following:

Dr. Joseph Herman Freedman alias Joseph H. Freeman, Hamilton and Cincinnati, Ohio, following his pleas of guilty to false execution of narcotic prescriptions, was on Oct. 22, 1945 sentenced to a term of two years, which was suspended and he was placed on probation for two years. This sentence is to commence at the expiration of a sentence of a term of one year and one day, also given on October 22, for violation of the federal narcotic law.

Dr. Frederick C. Steuart, Manchester, N. H., following his plea of guilty to violation of the federal narcotic law was on September 12 sentenced to a term of one year and one day, which was suspended and he was placed on probation for a period of two years.

Dr. Frank Richard Stephenson, Alto, Ga., pleaded guilty to violation of the federal narcotic law October 22 and was sentenced to serve a term of one year and one day.

Dr. Edmund C. Snavely, Sedalia, Mo., pleaded guilty October 15 to violation of the federal narcotic law and was sentenced to a term of one year and one day, placed on probation for five years to begin at the expiration of prison sentence. On November 15 the original sentence was modified, received a fine of $1,500 and placed on probation for five years.

Dr. Lee A. Butler, Lafayette, La., pleaded guilty January 9 to a narcotic violation, sentence suspended and placed on probation for five years, fined $5,000.

Dr. King David Cammack, Chicago, pleaded guilty to narcotic violation, on November 7 sentenced to term of two years, which was suspended, placed on probation for two years.

Dr. Roy Herndon Cox, Chicago, pleaded nolo contendere to narcotic violation, on January 17 placed on one year's probation.

Dr. Simon Bloom, New York, following his conviction of narcotic violation was on Dec. 14, 1945 sentenced to a term of one year and one day.

Dr. Ralph B. Brown, Columbus, Ohio, pleaded guilty to narcotic violation, on January 14 sentenced to a term of five years, sentence suspended, placed on probation for five years.

Dr. Joseph E. Fudell, Brooklyn, pleaded guilty to narcotic violation, on November 26 sentenced to a term of three years' probation.

Dr. Wyman W. Harden, Columbia, S. C., pleaded nolo contendere to narcotic violation, on November 26 sentenced to a term of two years and fined $500; sentence was suspended and he was placed on probation for a period of five years.

Dr. Ellis G. Klingler, Chicago Heights, Ill., pleaded nolo contendere to narcotic violation, found guilty November 5 and sentenced to a term of two years, sentence suspended and he was placed on probation for two years.

Dr. Berrien W. Kendall, Columbia, S. C., pleaded guilty to narcotic violation, on November 6 sentenced to a term of five years' probation.

Dr. William S. Knox, Waynesburg, Pa., pleaded guilty on Sept. 26, 1945 for narcotic violation and sentenced to a term of two years.

Dr. Roy T. Haskell, Akron, Ohio, pleaded guilty to narcotic violation and on December 11 was sentenced to pay a fine of $500.

Dr. Harrison B. Jewell, Perry, Iowa, and Dr. John H. Jewell, Coon Rapids, Iowa, pleaded guilty to narcotic violation, on Nov. 13, 1945 sentence postponed and each defendant was placed on probation for a period of three years.

Dr. David Newman, Bronx, New York, pleaded guilty to narcotic violation and on October 22 was sentenced to a term of two years probation.

Dr. Robert E. Rahm, San Antonio and Falls City, pleaded guilty to narcotic violation on January 24, sentence suspended and placed on probation for five years on condition that he surrender his special tax stamp and refrain from applying for registration under the federal narcotic law during period of probation.

Dr. Walter C. Rohrkaste, Pittsburgh, pleaded guilty to narcotic violation and on Dec. 4, 1945 sentence was suspended and he was placed on probation for five years.

Dr. Charles Hudson Turner, Dallas, on November 5 was sentenced to serve a term of eighteen months; court also recommended that he be incarcerated in U. S. Public Health Service Hospital, Lexington, Ky.

Dr. Carl W. Wagar, Kalamazoo, Mich., pleaded nolo contendere on November 9 to narcotic violation, on November 15 was sentenced to a term of two years and placed on probation for three years, probation to commence at expiration of penitentiary sentence.

Dr. James Andrew Wren, Lockwood, Mo., pleaded guilty Oct. 1, 1945 to narcotic violation; on same date sentence was suspended and he was placed on probation for two years.

Dr. Ashley Barrington Weathersbee, Cross Hill, S. C., pleaded guilty to narcotic violation, on October 12 was sentenced to a term of fifteen months.

Contact Lens Conference.—The second Contact Lens Conference will be held at the Knickerbocker Hotel, Chicago, May 2-3. On the first day members will hear reports from the organizing committee of the Society for the Advancement of Contact Lens Research and there will be election of officers and a board of directors of the organization. The second day will be devoted to the presentation of scientific papers and case histories. Each paper will not exceed fifteen minutes' reading time. It is urgently requested that all papers planned to be submitted at this meeting be forwarded to the chairman of the organizing committee, Mr. Philip L. Salvatori, 49 East 51st

Street, New York, on or before April 1. In order that adequate reservations may be provided, it is requested that all those who desire to attend this conference communicate promptly with the temporary chairman, Mr. Salvatori. A refresher course on the latest technics in fitting contact lenses will be given, free of charge, to all Obrig contact lens users and students and graduates from the Obrig School for Contact Lens Technicians. This refresher course will be held on the day following the two day meeting of the Society for the Advancement of Contact Lens Research. The society was organized at a meeting in New York Nov. 18, 1944 (The Journal, Dec. 16, 1944, p. 1041).

Association of Electroencephalographers Formed.—On March 1 the Eastern Association of Electroencephalographers was formed at a meeting in the Graduate Club of the Institute of Living, Hartford, Conn., to promote research in the field and plan to pool scientific information concerning the neurophysiology and clinical application of electroencephalography. Lieut. Comdr. Robert S. Schwab (MC) of the United States Naval Hospital, Boston, was elected chairman of the association, and Dr. Charles W. Stephenson, Hartford, was elected recorder. One of the immediate projects of the group is to approach the American Physiological Society, the American Neurological Society, the American Psychiatric Association and the Council on Physical Medicine of the American Medical Association on the matter of establishing a joint committee among the several organizations for the purpose of considering the desirability and means of establishing minimum standards for approved electroencephalographic laboratories. Chairman of the committee appointed to pursue this project is Dr. Hallowell Davis, associate professor of physiology at Harvard Medical School, Boston; members are Dr. Paul F. A. Hoefer, assistant professor of neurology at Columbia University College of Physicians and Surgeons, New York, and Dr. Margaret A. Kennard, assistant professor of neuropsychiatry and neuroanatomy at New York University College of Medicine. Wladimir T. Liberson, director of the physiologic research laboratory at the Institute of Living and professor at the Ecole des Hautes Etudes in New York City, was appointed chairman, and Leslie F. Nims, Ph.D., assistant professor of physiology, Yale University School of Medicine, New Haven, and Margaret B. Rheinberger, Ph.D., who is in charge of the electroencephalographic laboratory at Montefiore Hospital for Chronic Diseases in New York, were appointed members of the organization and program committee. The newly formed association will meet bimonthly. The next meeting will be on April 12 at the Institute of Living, at which time a draft of the constitution and by-laws will be presented.

PUERTO RICO

New Rural Dispensaries.—Under the auspicies of the Puerto Rican emergency program, construction of seventeen new medical centers in the rural areas of the island has already been started. It is the purpose of this government agency to coordinate the services of these rural dispensaries with the service of the municipal hospitals in the construction program. The insular government contemplates the construction of about 128 rural units, costing about $1,056,000. An investment of about $256,000 will be made in this construction program up to June 30, from which the cost of construction of the seventeen new medical centers in the rural zone will be covered. It is also expected that the insular legislature in its regular February session will pass appropriations amounting to $230,000, which is the additional money needed for the rest of the 1946 program. Of the remainder, $300,000 has been recommended by the planning board to be allocated during the fiscal year 1947-1948, and $270,000 during 1948-1949.

Hospital Construction Program Approved.—The planning board of Puerto Rico has approved a program for the construction of municipal hospitals in the island, where twenty-two municipalities, with a population of about 319,766, are lacking hospital facilities for indigent patients, and less than one half of such a great number of people have the services of a resident physician. The program calls for the investment of about $1,064,000 during the next three years if materials and equipment can be obtained. One bed for each thousand inhabitants is contemplated. At present the Department of Health of Puerto Rico has an allocation of $400,000 voted by the insular legislature for the construction of the first fifteen units, and $50,000 for preparation of plans, specifications and the purchase of land. According to the proposed plan, preference will be given to the construction of municipal hospitals in communities that now lack the service. Distribution of such facilities is to be made on the basis of the 1940 census of the island. The insular legislature is expected to vote the rest of the needed allocation of funds this month. A survey of hospital facilities in Puerto Rico made under the auspices of the health department last year indicates that of the seventy-seven municipalities on the island only fifty-five have hospital facilities, either through government units, district hospitals or private clinics. Of these fifty-five municipalities only thirty-four have a bed capacity of one or more per thousand inhabitants.

FOREIGN

Medical Libraries Aided.—Rehabilitation of medical libraries in the liberated countries of Europe is to be undertaken by the British Royal Medical Society, which will establish a central library bureau with the grant of almost £62,000 from the Rockefeller Foundation. The fund is to cover maintenance for four years.

Chinese Medical Journal Returns to China.—The *Chinese Medical Journal,* which during the war issued its editions in Washington, D. C., has resumed publication from Shanghai. Szeming Sze, editor, gives the address as the Chinese Medical Journal, Chinese Medical Association, 41 Tszepang Road, Shanghai, China.

Congress of French Speaking Electrocardiologic Physicians.—Under the presidency of Dr. Louis Delherm, Paris, the fourth Congress of French Speaking Electrocardiologic Physicians will be held in Paris on the same date as the Congress of Surgery, October 9-12. Three subjects will be discussed: Dr. Albert Lachapele, Bordeaux, on critical study of chronic vertebral rheumatism, Mm. Paul Cottenot, Lamarque and E. Gros on roentgen therapy by contact, and Professors Roger Baudoin and H. Fischgold on possibilities and limitations of electroencephalography. Address all correspondence to Dr. E. Cherigie, 9 Rue Daru.

Personal.—Sir William Ogilvie, London, has been appointed editor of the *Practitioner,* to succeed Dr. Alan A. Moncrieff, London, who has resigned on his appointment to the Nuffield professorship of child health at the University of London. Sir William, who received his knighthood in the New Year Honors list for distinguished services during the war, is surgeon to Guy's Hospital, a vice president of the Royal College of Surgeons and honorary major general and consultant surgeon to the British army. Dr. Moncrieff has been senior editor of the *Practitioner* since 1943, when he succeeded the late Sir Humphry Rolleston. Dr. William A. R. Thomson, London, who joined the *Practitioner* in 1944, will continue as associate editor.

Health in Czechoslovakia.—As a result of six years of German occupation, Czechoslovakia's national health is the gravest of its complicated postwar problems of recovery. With no complete postwar statistics on hand, social insurance data alone indicate an alarming increase of tuberculosis (200 per cent increase for men, 100 per cent for women). Both the people and their government are fully aware of the situation, which is aggravated by the loss of about 5,000 physicians during the occupation. At the faculty of medicine of Charles University in Prague the registration of medical students is four times its prewar size. Additional branches of the Prague faculty have been established in Plzen and Hradec Kralove. Overcrowding, combined with lack of equipment and literature, also hamper the medical faculties of Brno and Bratislava. Notes which students take of professors' lectures in overfilled classrooms are their only textbooks. Yet their professors have no source material on the tremendous progress in research and the practical achievements of American medical science in the past six years. In print and public meetings voices are being raised all over the country asking for these important tools, chiefly American medical journals. Urgent appeals are arriving from deans of medical schools and heads of large hospitals, each of which asks anew, in pathetic need and bewilderment, why no help is reaching them. Some medical books and journals donated to Prague have recently been shipped by the Masaryk Institute in New York, a depository for national and Charles University Library. These generous donations of institutions and private physicians will provide only a trickle of single copies which are to be divided among numerous medical institutions. Physicians who wish to contribute periodicals need only to ship these periodicals in cartons, collect, to Masaryk Institute, 8 West 40th Street, New York 18, where they are catalogued and packed for overseas shipping. Each volume carries an ex libris with the name of the donor and thus provides a permanent record of the individual's contribution to the rebirth of Czechoslovakian science.

CORRECTION

Chief of Surgical Service.—In a recent item under Army Awards and Commendations, Lieut. Col. Oscar E. Nadeau's position was incorrectly given and should have read "chief of surgical service, Fletcher General Hospital."

Deaths

Harold Eugene Robertson ⊕ Rochester, Minn.; University of Pennsylvania Department of Medicine, Philadelphia, 1905; born in Waseca, Minn., Oct. 8, 1878; professor of pathology at the University of Minnesota Graduate School, Minneapolis; formerly instructor in pathology at the Albany (N. Y.) Medical College and the Harvard Medical School in Boston, where he was assistant pathologist of the Boston City Hospital; served as instructor in pathology and bacteriology, assistant professor, associate professor and professor of pathology at the University of Minnesota Medical School, Minneapolis, where he was director of the department of pathology, bacteriology and public health from 1917 to 1921; member and past president of the American Association of Pathologists and Bacteriologists and the International Association of Medical Museums; member of the Minnesota Academy of Medicine, Alumni Association of the Mayo Foundation and the American Society of Clinical Pathologists; member of the American Society for the Control of Cancer and its board of directors; fellow of the American College of Physicians; served as a major with the American Expeditionary Forces during World War I; colonel, medical reserve corps, U. S. Army, not on active duty; senior consultant and formerly head of the section on pathologic anatomy, Mayo Clinic; died in the Kahler Hospital March 8, aged 67, of bronchopneumonia and carcinoma of the stomach.

Leon Mitchell Wilbor, Cathedral City, Calif.; University of Buffalo School of Medicine, 1911; born in Le Roy, N. Y., July 29, 1888; member of the American Medical Association and International Hospital Association; fellow of the American College of Hospital Administrators; past president of the Association of Western Hospitals; served during World War I; formerly associated with the U. S. Public Health Service Reserve; served as assistant chief, neuropsychiatric division, medical service, War Risk Insurance, Washington, D. C., when it was taken over by the U. S. Veterans Bureau; formerly medical officer in charge of U. S. Marine Hospital number 5 and U. S. Public Health Service Hospital number 73 both in Chicago, U. S. Veterans Hospital number 74 in Gulfport, Miss., and U. S. Veterans Hospital number 94 in American Lake, Wash.; formerly assistant medical director of the U. S. Veterans Bureau in Washington, D. C.; superintendent of the San Francisco Hospital from Feb. 1, 1928 to Nov. 15, 1943, when he retired; at one time member of the American Psychiatric Institute; died December 5, aged 57, of coronary occlusion.

Burton Thorne Simpson, Buffalo; University of Buffalo School of Medicine, 1903; born in Belleville, N. Y., July 30, 1873; joined the State Institute for the study of Malignant Diseases as resident pathologist in 1910, serving in that capacity until 1924, when he became director, and retiring in 1943 after having reached the compulsory retirement age; formerly associate professor of hygiene and public health at his alma mater; member of the American Medical Association and the American Radium Society; at various times president, vice president, member of the council and board of directors of the American Association for Cancer Research, president and member of the board of directors of the American Cancer Society and member of the scientific advisory board of the International Cancer Research Foundation; served as director of the cancer research division of the state health department and fellow of the Royal Cancer Society of London; died March 5, aged 72, of cardiac dilatation and chronic interstitial nephritis.

Henry Norton Torrey ⊕ Detroit; Johns Hopkins University School of Medicine, Baltimore, 1906; born in Creston, Ia., Oct. 7, 1880; fellow of the American College of Surgeons; served with the Harper unit overseas during World War I; past president of the Michigan Association of Industrial Surgeons; civilian aide to the Secretary of War in the Detroit district during World War II; for many years surgical director of the Michigan Mutual Liability Company; consulting surgeon, Harper Hospital; affiliated with the Michigan Mutual Hospital; member of the board of trustees of the Charles Godwin Jennings Hospital, where he died December 28, aged 65, of cerebral hemorrhage.

Charles Jacob Larkey ⊕ Bayonne, N. J.; University and Bellevue Hospital Medical College, New York, 1904; specialist certified by the American Board of Radiology; member of the Radiological Society of North America and the American College of Radiology; served as deputy health officer, chief medical inspector to the city board of education and health officer; member of the board of directors and staff of the Bayonne Hospital for many years; taught radiology at Columbia University College of Physicians and Surgeons, New York; on the staff of St. Mary's Hospital, Hoboken; died February 18, aged 62, of carcinoma of the stomach.

Siegfried Wachsmann, Middletown, N. Y.; Friedrich-Wilhelms-Universität Medizinische Fakultät, Berlin, Prussia, Germany, 1891; born in Gleiwitz, Germany, Dec. 24, 1864; member of the American Medical Association; fellow of the New York Academy of Medicine; formerly professor of clinical medicine at the Columbia University College of Physicians and Surgeons and the Fordham University School of Medicine, both in New York; served on the staffs and as medical director of the Montefiore and Sydenham hospitals of New York; died February 18, aged 81, of arteriosclerosis.

Julian Adair ⊕ Wilmington, Del.; Hahnemann Medical College and Hospital of Philadelphia, 1902; past president and secretary of the Homeopathic Board of Medical Examiners; served on the city board of health; president of the staff of the Memorial Hospital, where he died November 2, aged 65, of carcinoma of the prostate.

Frank A. Baker, Fall River, Mass. (licensed in Massachusetts under the Act of 1894); died November 18 of generalized arteriosclerosis.

Fredrick Brown, Valley City, N. D.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; member of the American Medical Association; chief of staff, Mercy Hospital; died November 13, aged 65, of coronary occlusion.

Harvey Simpler Brown, Freehold, N. J.; College of Physicians and Surgeons, Baltimore, 1899; member of the American Medical Association; served during World War I; for many years a member of the board of health, medical inspector and registrar of vital statistics; past president of the New Jersey State Health Officers Association; died in the U. S. Naval Hospital, Philadelphia, December 17, aged 70.

J. E. Christian, Duluth, Ga.; Atlanta Medical College, 1893; died November 11, aged 78.

Floyd Ferdinand Clark, Duluth, Minn.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; member of the American Medical Association; at one time deputy coroner of St. Louis County; on the staff of St. Mary's Hospital, where he died November 15, aged 69, of coronary occlusion.

James Harvey Clark ⊕ Carmel, Calif.; Johns Hopkins University School of Medicine, Baltimore, 1936; died recently in Austria, where he was serving for the United Nations Relief and Rehabilitation Administration, aged 47, of heart disease.

Henry Tyler Coleman, Pattonville, Mo.; Washington University School of Medicine, St. Louis, 1895; member of the American Medical Association; died December 19, aged 71, of coronary occlusion.

Francis Aloysius Cregg, Lawrence, Mass.; Jefferson Medical College of Philadelphia, 1905; member of the American Medical Association; died November 29, aged 64, of coronary occlusion.

Adolphus Hamilton Creps, Lima, Ohio; Medical College of Ohio, Cincinnati, 1890; died November 28, aged 78, of bronchopneumonia.

Richard Francis Daly, Marshfield, Mass.; Harvard Medical School, Boston, 1893; died November 30, aged 77, of chronic myocarditis.

Ezra E. Dickason, Brownsville, Texas; University of Louisville (Ky.) Medical Department, 1891; died in December, aged 79, of myocardial failure.

Augustus Sherman Downs ⊕ Saratoga Springs, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1899; on the staff of the Saratoga Hospital; died in Bradford, Pa., December 8, aged 75, of coronary thrombosis.

Joy Harris Glascock, Greensboro, N. C.; Woman's Medical College of Baltimore, 1896; honorary member of the Medical Society of the State of North Carolina; member of the American Medical Association; died recently, aged 82, of myocarditis.

Thomas Wilkin Gunter, Paxville, S. C.; Medical College of the State of South Carolina, Charleston, 1908; died December 27, aged 62, of chronic myocarditis.

Edgar S. Harris, Independence, Mo.; Medico-Chirurgical College of Kansas City, Mo., 1899; died in the Independence Sanitarium and Hospital November 27, aged 68, of uremia.

Herman Leo Harris ⊕ Columbus, Ohio; Ohio Medical University, Columbus, 1897; member of the staff of the Mercy Hospital, where he died December 15, aged 78.

Ernest Downing Hatch, Boston; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1909; formerly associated with the U. S. Public Health Service Reserve; died November 26, aged 74, of generalized arteriosclerosis.

Harry Ashford Haze ⊕ Lansing, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1895; served during the Spanish-American War; on the staff of the Edward W. Sparrow Hospital; member of the first state board of registration in medicine; died December 23, aged 77, of carcinoma of the prostate.

James S. Hedrick, Ada, Ohio; Starling Medical College, Columbus, 1882; died November 6, aged 86, of chronic arthritis and enlarged prostate gland.

Wilbur Randolph Hurst, Pasadena, Calif.; Rush Medical College, Chicago, 1912; fellow of the American College of Surgeons; served during World War I; member of the staffs of the Deaconess, St. Mary's and Welborn-Walker hospitals, Evansville, Ind.; died March 6, aged 60, of heart disease.

William Walter Johnston, Savage, Mont.; University of Minnesota College of Medicine and Surgery, Minneapolis, 1902; died in Byron, Minn., November 12, aged 70, of heart disease.

Robert Turner Jones ⊕ Harford, Pa.; Jefferson Medical College of Philadelphia, 1937; interned and served a residency at the Moses Taylor Hospital in Scranton; began active duty as a captain in the medical corps, Army of the United States, on May 11, 1942; relieved from active duty Oct. 3, 1945; died November 24, aged 35, of coronary thrombosis.

James Rossiter Kellogg, Portage, Wis.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1901; died November 25, aged 70, of heart disease.

Frank J. Kessler, Easton, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1893; member of the American Medical Association; formerly secretary of the Northampton County Medical Society; served as member of the board of education, member of the city civil service commission for selecting policemen, police surgeon and deputy coroner of Northampton County; died in the Betts Hospital December 24, aged 76, of pneumonia.

Walter Ellwood Kiefer, New York; Medico-Chirurgical College of Philadelphia, 1911; member of the American Medical Association; medical examiner for the Pennsylvania Railroad; died recently in Arlington (Va.) Hospital, aged 62, of coronary thrombosis.

John Ferdinand Klinedinst ⊕ York, Pa.; University of Maryland School of Medicine, Baltimore, 1889; member of the American Academy of Ophthalmology and Otolaryngology; formerly member and secretary of the U. S. Examining Board for Pensions in York County; past president of the York County Medical Society; on the staff of the York Hospital, where he was a member of the board of directors and where he died December 6, aged 78, of cerebral hemorrhage.

Emory Leroy Kniskern ⊕ Muskegon, Mich.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1895; past president of the Muskegon County Medical Society; on the staff of the Hackley and Mercy hospitals and the Muskegon County Sanatorium; died January 26, aged 77, of subacute bacterial endocarditis.

Benjamin Franklin Lorance ⊕ Auburn, Neb.; State University of Iowa College of Medicine, Iowa City, 1887; served as secretary of the Nemaha County Medical Society; county medical adviser; author of "Medi-Cult"; died December 4, aged 87.

Frank Cyrus McCue ⊕ Charlottesville, Va.; University of Virginia Department of Medicine, Charlottesville, 1898; formerly secretary-treasurer of the Albemarle County Medical Society; at one time superintendent of the Martha Jefferson Hospital and Sanitarium; died December 1, aged 71, of coronary occlusion.

William Andrew McKenney ⊕ Falmouth, Ky.; Medical College of Ohio, Cincinnati, 1890; served during World War I; secretary of the Bracken-Pendleton Counties Medical Society; county health officer; at one time chairman of the county democratic committee; died December 24, aged 78, of heart disease.

John M. McMillan, Candor, N. C.; Atlanta College of Physicians and Surgeons, 1909; member of the American Medical Association; honorary member of the Medical Society of the State of North Carolina; on the courtesy staff of the Moore County Hospital in Pinehurst, where he died December 6, aged 63, of coronary heart disease.

Clifford David Mercer ⊕ West Union, Iowa; Northwestern University Medical School, Chicago, 1908; fellow of the American College of Physicians; life member of the Iowa State Medical Society; past president of the Fayette County Medical Society; served during World War I; commissioner of insanity for Fayette County for fifteen years; member of the medical advisory board, World War II; health officer of West Union for twenty-five years; on the staff of the West Union Hospital; died December 25, aged 61, of coronary occlusion.

Frederick Walter Minty ⊕ Rapid City, S. D.; Sioux City College of Medicine, 1904; fellow of the American College of Surgeons; on the staffs of the Black Hills General and St. John's hospitals; died November 24, aged 63, of coronary thrombosis.

Frank Armington Morrill, Somerset, Mass.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1876; died December 30, aged 92, of mitral insufficiency.

Charles L. Mullins, Phoenix, Ariz.; Omaha Medical College, 1891; found dead recently, aged 78.

Mary A. Naylor, Pittsburgh; Woman's Medical College of Pennsylvania, Philadelphia, 1909; for many years medical examiner for the board of education in Pittsburgh; at one time taught in the public schools in Oil City, Pa.; died December 8, aged 78, of cerebral hemorrhage.

Douglas Steffian Nisbet ⊕ Passed Assistant Surgeon, U. S. Public Health Service, Philadelphia; University of Pennsylvania School of Medicine, Philadelphia, 1940; entered the public health service in 1941; diplomate of the National Board of Medical Examiners; died in the U. S. Marine Hospital, Baltimore, January 25, aged 30, of carcinoma of the testis.

John Howard F. O'Neil ⊕ Chicago; Illinois Medical College, Chicago, 1904; died in the Evangelical Hospital December 20, aged 61, of cirrhosis of the liver and hemorrhage from bleeding esophageal varices.

Alfred Vandiver Parsons, Washington, D. C.; University of Maryland School of Medicine, Baltimore, 1889; died in the Garfield Hospital December 29, aged 82, of bronchopneumonia and adenocarcinoma of the ascending colon.

James William Payne, Monticello, Ga.; Atlanta Medical College, 1914; died recently, aged 56, of carcinoma of the mouth.

Meyer Perlstein, Newton, Mass.; Middlesex University School of Medicine, Waltham, 1939; died in Boston November 11, aged 36, of carcinoma of the colon.

William Henry Phillips ⊕ Cleveland; Cleveland Medical College, Homeopathic, 1893; fellow of the American College of Surgeons; on the staffs of the Huron Road, East Cleveland, and the Glenville Hospital; died December 19, aged 74, of cardiac decompensation.

Ernest Wesley Rimer ⊕ Breckenridge, Minn.; Chicago College of Medicine and Surgery, 1908; a graduate in pharmacy; served overseas in the British medical corps during World War I and as city and county health officer; division surgeon for the Great Northern and Northern Pacific railways; on the staffs of St. Mary Hospital in Wahpeton, N. D., and St. Francis Hospital; died December 22, aged 63, of coronary thrombosis.

Frank Ritter ⊕ Louisville, Ky.; University of Louisville Medical Department, 1911; on the staff of St. Joseph Infirmary; died December 3, aged 58, of coronary occlusion.

George T. Ritter, Williamsport, Pa.; Jefferson Medical College of Philadelphia, 1908; member of the American Medical Association; for three terms a member of the school board, serving as president from 1931 to 1939; awarded the Grit meritorious award in 1937 in recognition of his leadership in educational affairs; died in Johns Hopkins Hospital, Baltimore, recently, aged 68, of pneumonia due to hypernephroma.

Fred Rudnick, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1905; member of the city health department; on the staff of St. Elizabeth's Hospital; died in the Norwegian American Hospital December 21, aged 71, of cerebral hemorrhage.

Charles Montgomery Russell, Columbia, Ky.; Kentucky School of Medicine, Louisville, 1890; University of Louisville Medical Department, 1891; past president of the Adair County Medical Society; for many years county coroner; died December 6, aged 75, of chronic myocarditis.

Henry Leonidas Scarborough, Conway, S. C.; Medical College of the State of South Carolina, Charleston, 1912; member of the American Medical Association; on the staff of the Conway Hospital; died December 18, aged 59, of coronary thrombosis.

William H. Schnell ⊕ Superior, Wis.; Milwaukee Medical College, 1912; formerly associated with the U. S. Public Health Service; served as chief surgeon of the Great Northern and the Soo Line railroads and as chief of staff of St. Mary's Hospital, where he died December 9, aged 60, of coronary occlusion.

Dixie C. Secord, Sumner, Neb.; Western University Faculty of Medicine, London, Ont., Canada, 1906; died December 4, aged 63, of uremia.

Edwin Stanton Sherrill, Detroit; College of Physicians and Surgeons, medical department of Columbia College, New York, 1885; served as city health officer and member of the board of education; in 1920 the Edwin S. Sherrill Elementary School was named for him; died December 30, aged 91, of cardiac decompensation and bronchopneumonia.

Ferdinand Shoemaker ⊕ Kansas City, Mo.; Georgetown University School of Medicine, Washington, D. C., 1891; member of the American Academy of Ophthalmology and Otolaryngology and the Medical Society of the State of Pennsylvania; fellow of the American College of Surgeons; formerly affiliated with the Indian Service and with the Veterans Administration facilities in Excelsior Springs and Kansas City; died in St. Mary's Hospital December 19, aged 77, of carcinoma of the colon.

Harry Marquis Smith ⊕ Canandaigua, N. Y.; University and Bellevue Hospital Medical College, New York, 1912; fellow of the American College of Surgeons; at one time county coroner; affiliated with the Frederick Ferris Thompson Hospital; medical examiner and surgeon for the Pennsylvania and New York Central railroads; died December 27, aged 57, of coronary occlusion.

George Reuben Sorrell ⊕ Washington, D. C.; Columbian University Medical Department, Washington, D. C., 1898; died in the Sibley Hospital December 10, aged 69, of cerebral hemorrhage and cardiovascular renal disease.

Nathan W. Stallard, Dungannon, Va.; College of Physicians and Surgeons, Baltimore, 1885; past president of the Scott County Medical Society; member and chief examining physician of the Scott County Draft Board during World War I; for many years pension examiner for the war department, secretary of the county board of health and postmaster of Dungannon; served as a member of the town council; died December 18, aged 83, of cardiac failure.

Thomas Milton Stewart ⊕ Cincinnati; Pulte Medical College, Homeopathic, Cincinnati, 1887; formerly professor of ophthalmology at his alma mater; member of the American Academy of Ophthalmology and Otolaryngology; fellow of the American College of Surgeons; served as a member of the staff of the Bethesda Hospital, where he died December 10, aged 79, of duodenal ulcer.

George G. Strickland, Philadelphia; Howard University College of Medicine, Washington, D C, 1898; one of the founders and for many years affiliated with the Mercy Hospital; died December 27, aged 76, of arteriosclerosis

Samuel Meredith Strong ⊕ Flushing, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1902; past president of the Dutchess County Medical Society; served during the Spanish-American War and World War I; affiliated with the Flushing Hospital; died in the Columbia Presbyterian Medical Center, New York, February 2, aged 68, of carcinoma of the stomach.

John Ritter Sutter ⊕ Edwardsville, Ill.; Washington University School of Medicine, St. Louis, 1907; for many years county physician; died December 3, aged 64, of coronary heart disease.

Walton Tackett, East Moline, Ill; Barnes Medical College, St Louis, 1907; member of the American Medical Association and the American Psychiatric Association; affiliated with the East Moline State Hospital, where he died December 14, aged 66, of coronary occlusion.

Gertrude Frances Thompson, Chicago; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1903; member of the American Medical Association; on the staff of the Women and Children's Hospital; died December 29, aged 78, of coronary thrombosis.

Thomas Lewis Thomson, Kingsmill, Ont.; Western University Faculty of Medicine, London, Ont., Canada, 1905; for many years a practitioner in Ann Arbor, Mich.; died in the Victoria Hospital, London, Ont., December 4, aged 67, of hypertensive heart disease with mesenteric artery thrombosis.

James B. Transou, Atlanta, Ga.; Meharry Medical College, Nashville, Tenn, 1917; died December 7, aged 52, of hypertensive heart disease.

Benjamin Vaughan ⊕ Louisville, Ky.; Louisville Medical College, 1906; on the staff of the SS. Mary and Elizabeth Hospital, where he died December 9, aged 66, of cerebral hemorrhage.

Robert Andrew Warren ⊕ Cleveland; Western Reserve University School of Medicine, Cleveland, 1914; member of the Cleveland Academy of Medicine; on the staffs of the Huron Road Hospital, East Cleveland, and the Woman's Hospital, where he was formerly chief of staff; died December 25, aged 61, of coronary thrombosis.

Frederick William Weston ⊕ Tustin, Calif.; University of Toronto Faculty of Medicine, Toronto, Ont., Canada, 1913; died December 1, aged 61, of coronary occlusion.

DIED WHILE IN MILITARY SERVICE

Gordon Horatio Hammill, Euclid, Ohio; Ohio State University College of Medicine, Columbus, 1928; member of the American Medical Association; began active duty as a captain in the medical corps, Army of the United States, on Sept. 23, 1942; died in Japan Oct. 4, 1945, aged 41, in an airplane crash.

Clinton Childs Horton Jr., Pendleton, S. C.; Emory University School of Medicine, Atlanta, 1944; interned at the Roper Hospital in Charleston; commissioned a lieutenant (jg) in the medical corps of the U. S. Naval Reserve on July 1, 1945; stationed in the psychiatric section of the Naval Hospital in New River, N. C.; killed Oct. 3, 1945, aged 24, in an automobile accident near Fayetteville, N. C.

Hickman Clark Howell, Springfield, Mo.; St. Louis University School of Medicine, 1943; interned at St. John's Hospital in St. Louis; began active duty as a first lieutenant in the medical corps, Army of the United States, on Sept. 15, 1944; accidentally drowned in Luzon, P. I., Sept. 9, 1945, aged 25, while boating on a lake.

Charles Floyd Jump ⊕ Helena, Mont.; University of Michigan Department of Medicine and Surgery, Ann Arbor, 1904; member of the Montana Academy of Otolaryngology; commissioned a lieutenant in the medical corps of the Second Montana Infantry; from June to November 1916 served as a captain in the Montana National Guard along the Mexican border; served as a major with the 163d infantry in France during World War I; discharged Aug. 6, 1919; began active duty as a major in the medical corps, Army of the United States, on Sept. 5, 1942, assigned as state medical officer for the Montana headquarters of Selective Service; promoted to lieutenant colonel; died in the Veterans Administration Facility, Fort Harrison, Oct. 23, 1945, aged 63, of coronary occlusion.

James Wilson Mader Jr., McKeesport, Pa.; University of Pennsylvania School of Medicine, Philadelphia, 1937; interned at the Western Pennsylvania Hospital in Pittsburgh; served as a fellow in surgery at the Mayo Foundation in Rochester, Minn.; began active duty as a lieutenant (jg) in the medical corps of the U. S. Naval Reserve on Aug. 4, 1941; later promoted through the grades to commander; died in Mexico City, Mexico, Dec. 19, 1945, aged 32, of heart disease.

John A. Marsico, Elyria, Ohio; Ohio State University College of Medicine, Columbus, 1930; member of the American Medical Association; interned at St. Francis Hospital in Columbus; captain, medical corps, Army of the United States; captured by the Japanese in the fall of Corregidor in 1942; died in Japan Jan. 27, 1944, aged 39, of cerebral hemorrhage.

Thomas William Miller ⊕ Alton, Ill.; St. Louis University School of Medicine, 1927; interned at St. Mary's Hospital in East St. Louis and St Luke's Hospital in Chicago; on the staffs of St. Joseph's and Alton Memorial hospitals; began active duty as a lieutenant commander in the medical corps of the U. S. Naval Reserve on May 3, 1943; died in San Francisco Aug. 29, 1945, aged 43, of extreme multiple injuries received in an automobile accident.

Charles Joseph Mooter, Omaha; Creighton University School of Medicine, Omaha, 1941; interned at the Creighton Memorial St. Joseph's Hospital; began active duty as a first lieutenant in the medical corps, Army of the United States, on July 1, 1942; promoted to captain; died in New Caledonia Dec. 15, 1944, aged 27, in an automobile accident.

Foreign Letters

LONDON LETTER

(From Our Regular Correspondent)

Feb. 28, 1946.

An Improved Mental Health Service: Mental Disorders Not Increased by the War

An important survey of neurotic disorders and treatment facilities by Dr. C. P. Blacker has just been published in book form entitled "Neurosis and Mental Health Services." It was carried out with the encouragement of the Ministry of Health and the assistance of experts and is largely based on reports from 216 clinics dealing with mental disorder. The origin of the survey was the question of the possible increase in neurotic disorders as the result of air raids. The important conclusion is reached that there are no grounds for supposing that the war has caused an increase in the more serious forms of mental disorder requiring admission to a hospital. This is remarkable in view of the heavy bombing, with considerable loss of life and injuries to persons and destruction of buildings in our cities while the country was passing through the greatest danger to which it ever was exposed. Few persons were without acute anxiety for husband, son or friend fighting for more than five years all over the world. The absence of increase in the serious forms of mental disorder is in consonance with the improvement in vital statistics frequently reported in The Journal. It is evidence of the grit of the people, who for a time faced the German peril alone.

The threat remains that the coming years may show an increase in neurotic disorder as a result of the difficulties of adjustment associated with demobilization and the return of prisoners who have endured German barbarities. Dr. Blacker thinks that it is possible that latent neurosis may reveal itself in the civilian population when the stresses of war are relaxed. The number of mental clinics have been increased as a result of the Mental Treatment Act of 1930, but there are still not enough. Dr. Blacker holds that the problem of psychiatric disorders is largely sociological—that they could be reduced or mitigated by better education of adults in the sensible handling of children, by educational services in which abnormalities are detected early, and by better industrial, occupational and social psychiatry. Teaching psychiatric units should be established in the university medical schools, each under the direction of a professor. Outside mental hospitals with 100 beds for each million of population should be provided for psychiatric inpatients, and outpatient clinics should be extended by 75 to 100 per cent. There should also be child psychiatric clinics. A medical officer of mental health should be appointed for the coordination of mental health services. The picture is a mental health service integrated with the new health service.

The London Municipal Hospital Service

The London County Council maintains seventy-six hospitals, probably the largest unified hospital service in the world. This service is separate from the older voluntary hospitals, to which the London medical schools belong. The council hospitals have developed from municipal infirmaries originally established for the care of the indigent. To convert these institutions into modern hospitals the council since 1930 has spent $20,000,000. There was severe damage from German bombing for which the cost of necessary repairs is estimated at $10,400,000. A comprehensive report on the restoration and development of the council's general and special hospital service has been made by a committee. It is proposed that more units be provided for specialized treatment and for rehabilitation in addition to those already established before the war. These centers include special units for the treatment of thyroid disease, rheumatism, diabetes, plastic surgery, thoracic surgery and radiotherapy, neurosurgery and fractures.

War Work of the American Ambulance in London

The American Ambulance in Great Britain, which is being wound up after a distinguished record of war service, has made a gift of $100,000 from its surplus funds to the Middlesex Hospital. The fund will be used to endow two single bed wards to which members of the staff of the American embassy and other citizens of the United States will have first claim. Col. J. J. Astor, chairman of the board of management, said that he had already expressed the nation's thanks for the magnificent work of the American Ambulance. In the hour of our greatest need, when our circumstances were black and indeed desperate, a group of American citizens in London conceived and created it. The gift would perpetuate the good relations which had always existed between the hospital and the American embassy and individual Americans in London. In a further tribute to American organization in the war Surgeon Rear Admiral Gordon-Taylor said that when the College of Surgeons was badly damaged and its Hunterian Museum almost destroyed the American Ambulance came to its aid with seventy-eight ambulances and removed 26,000 specimens to various parts of the country.

THE NETHERLANDS

(From Our Regular Correspondent)

Amsterdam, Jan. 20, 1946.

German Experiments at Auschwitz Camp

An official, juridically and medically confirmed report is published in the *Nederlandsch Tijdschrift voor Geneeskunde*, **31**:364, 1945, by E. DeWind, physician concerning experiments by the Germans carried out at the Auschwitz Camp on 612 women of various nationalities.

Professor Samuels of Cologne, on instructions from S. S. Hauptsturmführer Wirths, used 200 women, removing under anesthesia parts of the portio uteri for histologic investigation in search of early stages of cancer. Another distressing but less harmful experiment was intravaginal uterine photography. Most of the victims were later killed in gas chambers, and Samuels himself was shot.

Professor Schumann subjected 15 girls of 17 to 18 years of age to ultrashort wave treatment directed at the ovary. Several victims were badly burned, one of them dying as a result of this first stage of the experiment. One month later, transverse and longitudinal laparotomy was performed in two stages for total extirpation and inspection of the ovaries. Nine laparotomies were performed in as many quarters of an hour, without resterilization between these operations. Several mortal and permanently disabling sequels followed.

Professor Clauberg, progesteron expert, together with Dr. Goebel, both Gestapo men, investigated in the majority of the remaining victims substitutes for the x-ray contrast substance lipiodol. These investigations were prompted by a shortage of iodine. The subjects were bought from the S. S. With pressure generated by an electric pump, a viscous fluid was forced into the uterus, under x-ray control and without anesthesia, causing great discomfort. Every subject served for two to six experiments. Some of the victims died as a result of genital or peritoneal infections when the fluid penetrated the abdominal cavity. Many victims who survived were later gassed. About 50 Netherlands women, who lived through Clauberg's experiments, escaped and are expected to return to this country.

S. S. Oberstrumführer Weber and S. S. Oberscharführer Münch performed comparatively innocent blood group, malaria and toxicology tests.

Occasional pregnancies, for which arrangements seem to have existed in the camp, were interrupted in the seventh month, after the fetus had been killed.

Starvation Diseases Under the Japanese in the Far East

A. Colaço Belmonte has recently reported his experiences as a prisoner of war of the Japanese (*Nederl. tijdschr. v. Geneesk.* **32**:419 [Dec.] 1945). During three and one-half years of captivity the average mortality of prisoners of war from hardship and disease was approximately 25 per cent. Adequate medical care was deliberately withheld. Forced labor, chiefly in the coal mines, and systematic starvation lowered the average weight of one group of Australian prisoners of war to 51 Kg., many weighing only 38 Kg. Psychic changes resulted from confinement, particularly since a space of only 67 cm. was allowed each man in some camps in Java. The mortality from pneumonia was 22 per cent. Skin infections, including gangrenous furunculosis, were frequent. In one group in Java the author reports that, despite rapid weight loss, prisoners exhibited unimpaired vigor for about eight months. There was then observed a wide variety of symptoms, including painful extremities not relieved by analgesics, paresthesias, increased sweating of the feet, peroneal paralysis, disturbances of sensation especially for temperature, polyneuritis, deafness and visual disturbances, including central scotomas. Blindness occurred without fundus changes. Beriberi symptoms were not identified, but edema, gait changes due to abductor palsy and anesthesia dolorosa were noted. The response to vitamin and increased protein intake was not as rapid as would be expected from classic descriptions of the cure of deficiency diseases.

BRAZIL

(From Our Regular Correspondent)

São Paulo, Feb. 16, 1946.

Clinical Forms of Schistosomiasis Mansoni

Drs. Cesar Pinto and A. Firmato de Almeida have reported observations on 500 cases of Schistosomiasis mansoni from the northern part of the state of Minas Gerais. The organs which present the most important lesions are the large intestine, the liver, the bladder, the lymph glands and the lungs. They describe a case in a boy aged 12 years with serious involvement of the nervous system, presenting epileptiform and convulsive attacks, hysteria and delirium and generalized colitis as a result of S. mansoni infestation. The nervous phenomena disappeared after treatment with antimony and potassium tartrate. The authors also report 4 unusual cases with localization of a large quantity of S. mansoni eggs in the testes and the presence of eggs in the sperm. Their observations indicate that the incidence of schistosomiasis is increasing in an alarming manner in the northern part of Minas Gerais. Special effort is necessary to avoid the creation of a situation similar to that prevailing in China and in Egypt.

Bone Changes in Pemphigus Foliaceus

There are many cases of pemphigus foliaceus ("wildfire") in the interior of the state of São Paulo. A few years ago a special service was established to combat this puzzling disease. The service is under the competent direction of Dr. João Paulo Vieira and has a hospital for the treatment and study of cases of this disease. Dr. U. Lemos Torres of the hospital has just published a paper in which he describes the frequent occurrence of bone changes in patients affected by pemphigus leading to deformities and fractures. The first problem was to determine the exact nature of the bone dyscrasia and to decide whether these changes had an endocrine basis or were the result of nutritional factors. It is known that endocrine disorders do occur in pemphigus, but they are usually of a secondary nature. Dr. Torres found on the average slightly low levels of caloric intake as well as of calcium, phosphorus and proteins, which is common among the poor patients of São Paulo hospitals. As the majority of the patients had a good appetite, Dr. Torres made a careful study of their metabolism and found that in patients with pemphigus the basal metabolic rate was greatly increased, as a rule, an increase of 50 per cent, but in some cases 100 per cent and even 150 per cent. This condition creates a relative deficiency of calcium, phosphorus and vitamin D in the diet, explaining the bone changes reported and observed in the x-ray examination of more than 80 patients studied in the report.

Brief Items

Dr. E. Velter, a French specialist in ophthalmology, has recently arrived at São Paulo, where he was welcomed by the São Paulo Society of Ophthalmology and the Center of Study of Ophthalmology.

Dr. Beatrice Berle, wife of the American ambassador to Brazil, has been awarded the National Order of the Cruzeiro do Sul for patronizing and stimulating the development of medical and social work in Brazil.

Dr. Ernesto de Souza Campos, professor of bacteriology at the University of São Paulo, has been appointed minister of health, in the new administration of President Eurico G. Dutra. Dr. Campos succeeds Dr. R. Leitão da Cunha, professor of pathology at the University of Rio de Janeiro.

Lieut. Col. S. Uchoa Cavalcante, Major Waldemar Basgal, Capt. Clovis C. de Morais and Capt. O. de Moura Plaisant have been commissioned to study, in the United States, several problems of medicine and surgery connected with the medical corps of the Ministry of Aeronautics.

An institute of radiology has been established at the Medical School of Salvador, state of Bahia, under the direction of Dr. Adelaido Ribeiro. Dr. Coolidge, from the United States, and Drs. Manuel C. Malenchini and Jayme F. Roca, from the Department of Radiology of the Rawson Hospital at Buenos Aires, Argentina, were present at the inaugural ceremony.

Personal

Dr. Gustavo Friozzi, assistant professor of medicine at the University of São Paulo, left for the United States, where he will have special training in diseases of the digestive system at the University of Pennsylvania.

Dr. João de Barros Barreto, who recently resigned as director general of the National Department of Health, has just returned from Washington, D. C., where he was the representative of Brazil at the last meeting of the officers of the Pan American Sanitary Bureau. Dr. Barreto is now director of the Division of Hygiene of the Oswaldo Cruz Institute of Rio de Janeiro.

Marriages

Oscar Lee McFadyen Jr., Fayetteville, N. C., to Miss Frances Donald Cochran of Statesville in February.

Isadore Vanet Epstein, Memphis, Tenn., to Miss Gertrude Sylvia Berman of Washington, D. C., February 10.

Z. Bert Friedenberg, New York, to Miss Ruth B. Stratton of Townshend, Vt., at Philadelphia, February 16.

LeRoy B. Matthews, Memphis, Tenn., to Miss Polly Shaw Townsend in Columbia, S. C., February 17.

Martha Sue Lewandoski, Little Rock, Ark., to Mr. Howard T. Story of St. Joseph, Mo., January 13.

Merrill D. Evans, Kansas City, Mo., to Miss Mary Gentilcore of Youngstown, Ohio, February 9.

Harold D. Freedman, Lenoir City, N. C., to Miss Marjorie E. Fennen of Cincinnati, February 9.

Charles W. Brown Jr., Hamlet, N. C., to Miss Lois Little of Connersville, Ind., February 3.

Cyril Joseph Costello, Temple, Texas, to Miss Julia Ann Leahy in St. Louis in January.

Correspondence

TREATMENT OF SHOCK

To the Editor:—Crossman and Allen (THE JOURNAL, January 26, p. 185) in their remarks on shock state that it has been proved that isotonic solution of sodium chloride is equal or superior to plasma in the treatment of shock. Crossman in his further discussion of his article states that "great numbers of lives and limbs were unquestionably sacrificed by the official adherence to . . . pure plasma infusions." Such statements, based on animal experimentation, are directly contrary to the overwhelming clinical experience of military and civilian physicians and are impossible to reconcile with the proved beneficial results of hundreds of thousands of plasma infusions. My recent service in the army was intimately connected with the production of both plasma and whole blood. I am aware of no basis of fact for Dr. Crossman's remarks.

The specific aim of the treatment of shock is the restoration of an adequate blood circulation to combat anoxemia of the tissues. Shock, accompanied by hemorrhage, should be treated with whole blood transfusions. When whole blood is not available, plasma should be administered until blood can be obtained. The use of plasma is particularly indicated in traumatic or operative shock not associated with hemorrhage. Isotonic solution of sodium chloride is useful for replacement of fluid and electrolytes but will not, per se, overcome severe shock.

It can be inferred from these authors' remarks that the countless physicians in both military and civilian status who have taken pride in the thought that their prompt use of plasma has saved lives have been ill advised, not to mention over thirteen million donors who have given their blood for plasma during the recent war. Such, I do not believe, is true.

LESLIE HUGHES TISDALL, M.D., Brooklyn.

CONGENITAL CATARACTS IN SISTERS WITH CONGENITAL ECTODERMAL DYSPLASIA

To the Editor:—I have read with great interest the suggestion of Dr. S. J. Thannhauser (Differential Diagnosis of Ectodermal Dysplasia and of Rothmund's syndrome, THE JOURNAL, January 26, p. 238) that the patients described are examples of Rothmund's syndrome. I am inclined to agree with his suggestion after looking up the pertinent literature on the subject (including Rothmund, A.: Ueber Katarakt in Verbindung mit einer eigenthumlichen Hautdegeneration, *Arch. f. Ophth.* **14:** 159, 1868. Seefelder, R.: Ueber familiares Auftreten von Katarakt und Poikilodermie, *Ztschr. f. Augenh.* **86**:81 [May] 1935. Schnyder, H. F.: Ueber Katarakt bei poikilodermieartiger Hauterkrankung, *Klin. Monatsbl. f. Augenh.* **92**:408, 1934. Thannhauser, S. J.: Werner's Syndrome [Progeria of the Adult] and Rothmund's Syndrome: Two Types of Closely Related Heredofamilial Atrophic Dermatoses with Juvenile Cataracts and Endocrine Features: A Critical Study with Five New Cases, *Ann. Int. Med.* **23**:559 [Oct.] 1945). I apologize that this syndrome in the literature had not been encountered. In this I was not the only guilty party (Bloch, Bruno, and Stauffer, H.: Skin Diseases of Endocrine Origin (Dyshormonal Dermatoses), Poikiloderma-like Changes in Connection with Underdevelopment of Sexual Glands and Dystrophis Adiposogenitalis, *Arch. Dermat. & Syph.* **19**:22 [Jan.] 1929).

Dr. Thannhauser's explanation of the causation of these allied dermatoses, congenital ectodermal dysplasia of the hydrotic and anhydrotic type and of Rothmund's syndrome, is also a new approach to a perplexing etiologic subject. While the attempt has been generally made to classify these dysplasias under the two headings, there have been so many *formes frustes*, variants and so on that the physician has had to be very agile to keep ahead of the race. Thus Thannhauser (Hereditary Ectodermal Dysplasia of "Anhydrotic Type," with Symptoms of Adrenal Medulla Insufficiency and with Abnormalities of Bones of Skull, THE JOURNAL, March 14, 1936, p. 908) reports a typical anhydrotic type of ectodermal dysplasia with low fasting blood sugar, flat sugar tolerance curve and low blood pressure (adrenal medulla disturbance). Roentgenograms showed exostoses of the tables of the skull. Osseous tissue is of mesodermal origin and this case was not a purely congenital ectodermal dysplasia of the anhydrotic type. I have also had difficulty in putting such a case under the proper heading from the developmental standpoint if we are to continue to use the term congenital ectodermal dysplasia. I regret that I am not sufficiently versed in disturbances of the germ plasm theory, but perhaps this is the best method of explaining these cases: "in ectodermal dysplasia there is a defect restricted to the ectodermal germ layer, while in Rothmund's syndrome a multiple germ plasm defect" is possible as there is blood vessel involvement, mesodermal tissue (Wilkins, Lawson, and Fleischmann, Walter: Ovarian Agenesis, *J. Clin. Endocrinol.* **4**:357 [Aug.] 1944). Of course Rothmund suggested as far back as 1868 that the condition he described was an ectodermal dysplasia, and it is true that most of the involvement found in the disease is of true ectodermal type.

H. N. COLE, M.D., Cleveland.

SEKOV DANGEROUS TO HEALTH

[In THE JOURNAL, Nov. 24, 1945, page 904, appeared an item relative to a product called Sekov, a nostrum containing thyroid, which was being sold in California. Now a letter has been received from the Bureau of Food and Drug Inspections of the California State Department of Public Health defining the present status of the product in California. The letter follows.—ED.]

To the Editor:—We note with interest the article on Sekov which appeared in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION on Nov. 24, 1945, page 904, under "Bureau of Investigation." We note particularly the following statement in said article,

> Thus the public outside of California is to be protected from the risk involved in taking Sekov. Whether the California officials will be willing to "harm home industry" by restricting the sale of Sekov in its own state or simply follow the "caveat emptor" policy, remains to be seen

You have evidently been misinformed as to the method of distribution of Sekov in California. We had already stopped the sale of Sekov prior to the federal government's doing so. One cannot buy at retail a package of Sekov in this state.

This firm, however, has circumvented the California Pure Drugs Act and Pharmacy Law and other laws applicable to such dangerous products as thyroid by having on the payroll of its establishment a licensed medical practitioner who examines and prescribes Sekov to all persons referred to that firm.

We have tried ordering this product through the mail, which requests this firm refused; however, it did mail the order blank to us, and when our undercover agent called at its place of business she was immediately told that it would be necessary to have the firm's doctor make a complete examination and that the fee would be $5 which would be refunded after the purchase of the thirty day supply and any additional supplies which may be suggested by the doctor. In other words, before the average purchaser obtains one treatment she spends approximately $20. We have attempted on eleven different occasions to buy Sekov but we were unsuccessful; however, we could have purchased it had we submitted to the doctor's examination.

The attorney general of the state of California has advised us that owing to the fact that a licensed physician and surgeon prescribes this product we do not have a case.

You can readily see that the modus operandi used by this firm in employing a licensed physician and surgeon to "cover up" for it in carrying on its business presents a far different problem to the state of California than it did to the United States Food and Drug Administration.

If it were not for the fact that there are renegades in the medical profession, California would be able to protect amply any citizen purchasing such a product as Sekov. We have diligently enforced the pure food and drug laws in this state and have successfully restricted the sale of preparations containing thyroid except on the prescription of a licensed medical practitioner, but the mere fact that this firm employs a licensed medical practitioner defeats the purposes of all the laws here in California.

Not with any view in mind of boasting, we want to say that the enforcement of the California Pure Drugs Act and the laws applicable to frauds are enforced in this state.

In view of the facts presented, we feel that the statement implying the laxity of the protection afforded the public in regard to this product here in California should be retracted. We want to say at this time that we hold no animosity against The Journal. In fact, the bureau of which I am chief holds your organization in high regard.

Milton P. Duffy, Los Angeles.
Chief, Bureau of Food and Drug Inspections, Food
and Drug Inspection Section, State of California
Department of Public Health.

RADIUM

To the Editor:—In the article entitled "Radium" in The Journal, January 26, Desjardins and Williams state on page 211 that "in cavernous nevus the course of the disease is favorably influenced" and "the treatment is lengthy and tedious." The second sentence should be qualified by saying that the treatment is lengthy and tedious in respect to extensive and deep seated cavernous angiomas but not so in small and relatively superficial vascular birth marks. Many of them respond readily to treatment with radium plaques.

It should, in my opinion, be stressed that small, slowly growing simple angiomas in infants almost always regress without treatment as the child grows older. Angioma simplex in adults is indeed a rarity.

Attention should also be directed to the fact that the flat vascular nevus—the port wine stain—does not respond to radiation therapy. If the dosage in such lesions is so large as to produce destruction of the blood vessels, then scarring, atrophy and pigmentation will be the final outcome. Port wine stains may often be readily concealed with suitably tinted pastes and creams.

Fred Wise, M.D., New York.

FELLOWSHIPS IN PUBLIC HEALTH

To the Editor:—The New York State Department of Health has available a limited number of fellowships for young physicians desirous of obtaining necessary field and academic experience to qualify for full time public health positions.

Six to twelve months of orientation in field work are provided under the guidance of experienced district state health officers. This is followed by an academic year at a postgraduate school of public health leading to a degree in public health. A generous stipend is allowed during both the field and the academic training periods, and tuition is paid at the school of public health. Candidates for the fellowship must possess at least the following basic qualifications: U. S. citizenship; graduation from a medical school approved by the American Medical Association; one year's internship in a hospital approved for such internship by the American Medical Association; license to practice medicine in New York State or eligibility to take the examination to obtain such license. The upper age limit is 35 years.

Physicians who complete the fellowship are professionally qualified for full time appointment on the staff of most local and state health departments.

In order to complete at least six months' field experience prior to the beginning of the next academic year, candidates must be appointed not later than March 15. A few fellowships are still available. Physicians who are interested in making application should write to the State Department of Health, Albany 1, N. Y.

Edward S. Godfrey Jr., M.D., Albany, N. Y.
Commissioner of Health.

Bureau of Investigation

COSMETICS—ADULTERATED OR MISBRANDED

Abstracts of Notices of Judgment Issued by the Food and Drug Administration of the Federal Security Agency

[Editorial Note.—These Notices of Judgment are issued under the Food, Drug and Cosmetic Act and are designated C. N. J. The abstracts that follow are given in the briefest possible form: (1) the name of the product, (2) the name of the manufacturer, shipper or consigner, (3) the date of shipment, (4) the composition, (5) the type of nostrum, (6) the reason for the charge of misbranding or adulteration, and (7) the date of issuance of the Notice of Judgment—which is considerably later than the date of the seizure of the product and somewhat later than the conclusion of the case by the Food and Drug Administration.]

Alexandra de Markoff Cleansing Cream.—Alexandra de Markoff, Inc., New York. Shipped between Dec. 27, 1943, and March 22, 1944. Adulterated because it contained a hair dye color known as "butter yellow," a non permitted coal tar dye known to possess carcinogenic properties.—[*C.N.J., F.D.C. 102, January 1945.*]

Gold Coast Hair Lacquer.—Robinson Company, Chicago. Shipped August 12, 1943. Adulterated because it contained a poisonous substance (not named) which might have rendered it injurious to those who applied it under the conditions of use prescribed in the label—"Can be sprayed or padded on."—[*C.N.J., F.D.C. 98; January 1945.*]

Hubere Hair Lacquer and Hair Lacquer Pads.—Hubere Cosmetics, Chicago. Shipped between July 28 and August 18, 1943. Both Lacquer and Pads adulterated because they contained a poisonous substance (not named) which might have rendered them injurious to users under the conditions prescribed in the labeling and also those that are customary and usual.—[*C.N.J., F.D.C. 96; January 1945.*] An additional Notice of Judgment, for the same reason as above, was reported in *C.N.J. 97,* issued against Bailey's Beautician Supply Company, Chicago, which had shipped a consignment of Hubere Hair Lacquer Pads July 26 and August 2 and 9, 1943.

Miracle Aid for Wrinkles.—Miracle Products, Chicago. Shipped between Nov. 27, 1943, and June 7, 1944. Composition: essentially water, with small amounts of protein, such as egg white, with salt and perfume. Misbranded because bottle label and accompanying circulars falsely represented that article would be effective in removing wrinkles and double chin, and would supply skin tissue protein to body.—[*C.N.J., F.D.C. 110, January 1945.*]

Oliv-Tone for Hair and Scalp.—Great Atlantic Laboratories, Boston. Shipped Feb. 8 and April 12, 1944. Adulterated because it contained a coal tar color known as "butter yellow," the use of which is forbidden in cosmetics, because of its carcinogenic properties. Misbranded because the name "Oliv Tone" gave the false impression that the product contained olive oil.—[*C.N.J., F.D.C. 103, January 1945.*]

Pierrette Custom Process of Cold Permanent Waving.—Pierrette, Los Angeles. Shipped July 7, 1942. Adulterated because it contained a poisonous substance, ammonium hydrogen sulfide, which might have rendered it injurious to persons applying it under the customary conditions of use.—[*C.N.J., F.D.C. 99, January 1945.*]

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Dental Practice Acts: Conviction for Assault Constitutes a Felony.—Consolidated Laws, chapter 16, article 49, section 1311, subdivision 12 (the Education Law) provides in part that:

> A conviction of felony shall forfeit a license to practice dentistry, and, upon presentation to the department or a county clerk by any public officer or officer of a dental society of a certified copy of a court record showing that a practitioner of dentistry has been convicted of felony, that fact shall be noted on the record of license and clerk's register, and the license and registration shall be marked "canceled"

Petitioner, a licensed dentist, was indicted for assault in the first degree, a felony, and pleaded guilty. Pursuant to the law quoted, his license to practice dentistry was canceled. He then filed suit to annul the action of the defendant State Board of Dental Examiners. From an order confirming the revocation, petitioner appealed to the Court of Appeals of New York.

After the plea of guilty, sentence was suspended and petitioner was placed on probation for five years. It was the petitioner's contention that, since his sentence was suspended and he was placed on probation, he was not "convicted of a felony" within the meaning of those words as they are used in the Education Law. The court said that it had, on occasion, interpreted the word "conviction" to mean a verdict or plea of guilt. The word "convicted" or "conviction" is of equivocal meaning. It may mean the adjudication of guilt; it may mean the adjudication and the judgment or sentence. Continuing, the court said that in a disciplinary proceeding against a member of a profession, where the latter confesses in open court by formal plea of guilt the commission of a felony, it seems to us that the legislature clearly intended such plea to constitute conviction of a felony, even though probation followed rather than commitment to prison. Accordingly the action of the State Board of Dental Examiners in canceling the petitioner's license to practice dentistry was affirmed.—*Weinrib v. Beier, 64 N. E. (2d) 175 (N. Y., 1945).*

Optometry Practice Acts: Legality of Corporate Practice; Optometry Not a Learned Profession.—The plaintiff corporation filed suit to enjoin the defendant optometrist from making any use of a customers' list which he had obtained while in the plaintiff's employ. From a decree dismissing the plaintiff's case for want of equity, the plaintiff appealed to the appellate court of Illinois.

The plaintiff alleged that, in the operation of its retail store, it had for more than fifteen years engaged in the business of selling eye glasses "on prescription from persons authorized under the laws of Illinois to practice optometry or medicine and surgery." From August 1937 to June 1944 defendant was employed in the plaintiff's optical department, and in such position he had complete charge of the list of some five hundred prior customers of the department. He left the plaintiff's employ on a Saturday. The following Monday each name on the list received a letter from the defendant stating that he was entering private practice and soliciting the person's patronage. The plaintiff's complaint then concluded with allegations concerning the value of the list and the damage to the plaintiff resulting from defendant's using this confidential list to his own advantage. The defendant contended that the plaintiff's complaint should be dismissed for want of equity. In support of this he urged that the complaint showed on its face that the plaintiff, a corporation, was performing functions—the practice of optometry—prohibited by law to corporations. The plaintiff contended that the complaint showed no such thing and argued that, on the contrary, a corporation is exempt from the provisions of the optometry practice act.

The act provides, among other things:

> "The following persons, firms and corporations are exempt from the operation of this act: . . . (*b*) . . . firms and corporations who shall sell eye glasses or spectacles in a store, shop or other permanently established place of business on prescription from persons authorized under the laws of this state to practice either optometry or medicine and surgery. . . ." (ch. 91, sec. 29, Ill. Rev. Stat. 1945).

We are of the opinion, said the court of appeals, that plaintiff is a corporation as described in clause (*b*) of section 92, that it sells eye glasses or spectacles on prescription from persons authorized under the statute to practice optometry and that in so doing it is exempt from the operation of the statute. Plaintiff is engaged in a lawful business. The act contemplates that licensed optometrists may be employed. Section 103 provides that permitting any person in one's employ to practice optometry, unless that person has a certificate of registration as a registered optometrist, shall constitute a misdemeanor. This language, continued the court, shows that where the person in the employ of another as an optometrist has a certificate of registration there is no violation of the statute by the employer. It is common knowledge that corporations operating department stores employ registered optometrists to examine purchasers' eyes and to prescribe glasses. We assume that the members of the general assembly possessed this knowledge. Although the optometry act has been in operation since 1919 and was amended in 1945, the legislature has not inhibited the employment of optometrists by corporations, co-partnerships or individuals who are in the business of selling eye glasses or spectacles. Referring to the case of *Silver v. Lansburgh & Brother*, 11 F. (2d) 518, the court quoted with approval as follows:

> Appellants, in the main, base their claim for injunctive relief upon the ground that optometry is a learned profession the very nature of which, they say, prohibits the practitioner thereof from any affiliation or connection with a corporation or nonoptometrist . . . The court found that optometry is a mechanical art which requires skill and a knowledge of the use of certain mechanical instruments and appliances designed to measure and record the errors and deviations from the normal found in the human eye but is not a learned profession comparable to law, medicine and theology and that, though certain standards of education are prescribed by the statute and by rules of the board created under it, optometry is not a part of medicine . . . Optometry is said by a well known writer on the subject not to be a part of medicine "either by inheritance, basic principles, development or practice" It is "an applied arm of optical science resting upon the work and discoveries of physicists and opticians through the ages down to modern times It does not treat the eye, whether in health or disease, but adapts the light waves which enter the eye, in accordance with optical principles so as to produce focused and single vision with the least abnormal exertion on the part of the eye

There is no more reason, concluded the court, to prohibit a corporation from employing licensed optometrists than there is to prohibit similar employment of accountants, architects or engineers Accordingly the decree of the lower court in favor of the defendant was reversed and the cause remanded to the trial court for further proceedings.—*L. Klein v. Rosen, 64 N. E. (2d) 225 (Ill., 1945).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, March 23, page 815.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS Parts I and II Various Centers May 6 8 Part III Various Centers, March Exec Sec, Mr. E. S Elwood, 225 S Fifteenth St, Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral* New York, Oct. 9 14 Sec, Dr. Paul M. Wood, 745 Fifth Ave, New York 22

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral* San Francisco, June 27-29. Final date for filing application is April 15. *Written* Final date for filing application is July 1. Asst. Sec, Dr. W. A. Werrell, 1 W. Main St, Madison 3, Wis.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Oral* Chicago, May 5-12. Sec, Dr. Paul Titus, 1015 Highland Bldg, Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: Chicago, May 22 25 Sec, Dr. Dean M. Lierle, University Hospital, Iowa City, Ia

AMERICAN BOARD OF PEDIATRICS: *Oral* Cleveland, April 27-28 and San Francisco, July 1-5. Sec, Dr. Lee F. Hill, 3309 Forest Ave, Des Moines, Ia.

AMERICAN BOARD OF RADIOLOGY: Chicago, Nov. 27 to Dec. 1. Final date for filing application is Sept. 1. Sec, Dr. B. R. Kirklin, Mayo Clinic, Rochester, Minn.

AMERICAN BOARD OF SURGERY: *Written. Part I.* Various centers, October. Final date for filing application is July 1. Sec, Dr. J. S Rodman, 225 S. 15th St., Philadelphia 2.

AMERICAN BOARD OF UROLOGY: *Oral.* Chicago, February 1947. Final date for filing application is Nov. 15. Sec, Dr. Gilbert J. Thomas, 1409 Willow St, Minneapolis 4.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Clinical Pathology, Baltimore

15:419-488 (Oct.) 1945

Disseminated Granuloma Venereum. E. Palik and J. R. Schenken. —p. 419.

Intermittent Fever with Lesions Simulating Those of Hodgkin's Disease: Case Report. E. A. Gall and S. G. Page Jr.—p. 431.

*Penicillin Resistance of Staphylococcus Aureus and Its Clinical Implications. H. H. Plough.—p. 446.

Determination of Bromsulphalein in Normal, Turbid, Hemolyzed or Icteric Serums. O. H. Gaebler.—p. 452.

Sarcoma of Prostate: Report of 1 Case of Rhabdomyosarcoma of Prostate. A. E. Rappoport and C. E. Nixon.—p. 456.

*Erythroblastosis Fetalis Unrelated to Rh Factor: Report of 9 Cases Suggesting Isoimmunization of Group O Mothers by A Children. S. H. Polayes and C. Ohlbaum.—p. 467.

Rh Heterozygous Mendelian Transmission in Large Family: Case Report. I. G. Frohman.—p. 471.

Tuberculoid Reaction in Retroperitoneal Neurocytoma. P. H. Hartz and A. Van Der Sar.—p. 473.

Screening Test for Identification of Allergic States. A. G. Hulett. —p. 478.

Ammonia Poisoning and Hemolytic Anemia with Bone Marrow Heterotopia. O. J. Pollak.—p. 481.

Penicillin Resistance of Staphylococcus Aureus.—Plough reports the penicillin sensitivity of 40 strains of hemolytic Staphylococcus aureus isolated from patients in an army hospital. The sensitivity ranged from complete tolerance of 4 penicillin units per cubic centimeter to inhibition by 0.002 unit per cubic centimeter. Over 40 per cent of the strains could be called resistant. Most strains isolated from patients who had received penicillin treatment were resistant. Most strains from patients who had not received penicillin were sensitive.

Erythroblastosis Fetalis Unrelated to Rh Factor.—Polayes and Ohlbaum report 3 additional cases of erythroblastosis fetalis in which the mother belonged to blood group O and the offspring to group A, with the mother's serum showing abnormally high anti-A agglutinin titers. The authors have now studied 9 cases in which the Rh factor as well as the Hr antigen were excluded as possible immunizing agents. Two of the 9 cases terminated fatally. The 2 fatal cases showed on postmortem the classic anatomic changes of erythroblastosis fetalis. Evidence is accumulating that erythroblastosis fetalis may result from isoimmunization with the A (and B?) antigen by a mechanism similar to that already established for the Rh factor.

American J. Digestive Diseases, Fort Wayne, Ind.

12:385-402 (Dec.) 1945

Nomogram for Preparation of Insulin-Protamine Zinc Insulin Mixtures. E. M. Abrahamson.—p. 385.

*Metabolic Abnormalities in Obesity: Statistical Survey. M. A. Goldzieher, N. A. Reimer and J. W. Goldzieher.—p. 387.

Effect of Temperature on Experimental Production of Ulcers in Intestines of Dogs. R. L. Driver.—p. 394.

Inhibitory Effect of Mineral Oil on Experimental Production of Ulcers. R. L. Driver.—p. 395.

Importance of Paracolon Organisms with Salmonella and Shigella Antigens. O. Felsenfeld and Viola Mae Young.—p. 396.

Staphylococci in Gastroenterology. G. H. Chapman.—p. 399.

Metabolic Abnormalities in Obesity.—The Goldziehers and Reimer compared observations on 100 unselected cases of obesity with 100 cases of obesity clinically diagnosed as pituitary disease. It was found that the mean basal metabolic rate is lower than normal in the obese and significantly lower in pituitary obesity as well as in obese juveniles. The specific dynamic action of proteins is lower than in normal controls. A higher specific dynamic action appears in obese patients of even fat distribution and in those with regional distribution of the hypothyroid or hypogonad type. The specific dynamic action is low in pituitary obesity as well as in the juvenile group. Much higher values were obtained in the menopausal or hypogonad group. The differences observed are statistically significant. The mean of the fasting blood sugar in the obese is normal, but the distribution of the figures shows a substantial percentage in the hypoglycemic and hyperglycemic ranges. The mean blood sugar in pituitary and juvenile obesity is significantly lower. The blood uric acid is elevated in the obese. Lymphocytosis is a symptom of obesity. Lower twenty-four hour urine volume and diminished salt excretion characterize both the unselected and the pituitary type of obesity. Deviations from the normal metabolic state are so common in the obese as to assume statistical significance.

American Journal of Physiology, Baltimore

145:123-271 (Dec.) 1945. **Partial Index**

Influence of Sodium Lauryl Sulfate on Biologic Response to Gonadotropins and to Insulin. F. Bischoff.—p. 123.

Vitamin Deficiency and Overdosage and Resistance of Rats to Lowered Barometric Pressures. H. A. Charipper, E. D. Goldsmith and A. S. Gordon.—p. 130.

Number and Relative Concentrations of Protein Constituents of Canine Pancreatic Juice as Determined by Electrophoresis. Muriel Platt Munro and J. E. Thomas.—p. 140.

Effect of Sodium and Chloride Salts in Preventing Shocklike State Following Venous Occlusion of Limb in Dog. Julia Meyer, Bessie Lendrum and L. N. Katz.—p. 151.

Changes in Blood During Chronic and Acute Dehydration. D. DeBoer. —p. 154.

Increased Susceptibility of Protein Deficient Dogs to Benzene Poisoning. Tsan-Wen Li, S. Freeman, V. H. Hough and F. D. Gunn.—p. 166.

Alterations in Properties of Dog Hepatic Bile with Increasing Age of Chronic Biliary Fistula. E. M. Boyd, T. J. Earl, Shirley Jackson, Betty Palmer and Mary Stevens.—p. 186.

Age, Sex, Carbohydrate, Adrenal Cortex and Other Factors in Anoxia. S. W. Britton and R. F. Kline.—p. 190.

Survival of Nonadrenalectomized Rats in Burn Shock With and Without Adrenal Cortical Hormone Treatment. D. J. Ingle and M. H. Kiozenga.—p. 203.

Changes in Components A and B of Prothrombin in Dog Following Hepatectomy. F. L. Munro, E. R. Hart, Muriel Platt Munro and A. A. Walkling.—p. 206.

Effect of Exposure to Oxygen at High Pressure on Tonus and Respiration of Pyloric Muscle from Rabbit. B. C. Riggs.—p. 211.

Effect of Ambient Air Temperature and of Hand Temperature on Blood Flow in Hands. C. R. Spealman.—p. 218.

Fate of CO in Body During Recovery from Mild Carbon Monoxide Poisoning in Man. F. J. W. Roughton and W. S. Root.—p. 239.

Elimination of Carbon Monoxide from Human Body with Reference to Possible Conversion of CO to CO_2. C. A. Tobias, J. H. Lawrence, F. J. W. Roughton, W. S. Root and M. I. Gregersen.—p. 253.

Role of Proprioceptors in Shivering. J. F. Perkins Jr.—p. 264.

American Journal of Psychiatry, New York

102:289-432 (Nov.) 1945. **Partial Index**

State Sterilization Programs for Prophylactic Control of Mental Disease and Mental Deficiency. C. J. Gamble.—p. 289.

Correlation of Preelectroshock Electroencephalogram and Therapeutic Result in Schizophrenia. W. J. Turner, L. Lowinger and J. H. Huddleson.—p. 299.

Prophylaxis of Cardiac Complications in Electroshock Therapy. M. Hayman.—p. 316.

Organic and Hysterical Anesthesia: Method of Differential Diagnosis with Aid of Galvanic Skin Response. F. C. Redlich.—p. 318.

Aging and Detoxication: Studies in Hippuric Acid Synthesis During Psychoses of Involutional and Old Age Group. K. Stern, E. G. Hinds and B. A. Askonas.—p. 325.

Psychoanalysis and the Unconscious. K. Dunlap.—p. 330.

Personality of Successful Soldier. B. H. McNeel and T. E. Dancey. —p. 337.

Attitudes of Soldiers Returning from Overseas Service. W. Corwin. —p. 343.

Brief History of Family Care of Mental Patients in America. H. M. Pollock.—p. 351.

Emotional Adjustment of Newly Blinded Soldiers. B. L. Diamond and Alice Ross.—p. 367.

Autobiographic Study as Aid to Psychotherapy. D. McG. Kelley.—p. 375.

Central Nervous System in Morphinism. J. M. Swain.—p. 378.

Some Relationships Between Excitement, Depression and Anxiety. D. E. Cameron.—p. 385.

Self-Induced Psychosis with Hyperthyroidism Complicating Manic Depressive Psychosis: Experimental Human Hyperthyroidism. G. N. Thompson.—p. 395.

Autokinetic Test: Its Value in Psychiatric Diagnosis and Prognosis: Preliminary Report. M. C. Sexton.—p. 399.

Note on Apomorphine as Sedative. F. Feldman, S. Susselman and S. E. Barrera.—p. 403.

American Journal of Public Health, New York

35:1253-1352 (Dec.) 1945

Twenty-Five Year Review of Work of Committee on Administrative Practice. W. L. Halverson.—p. 1253.
Recent Trends in Early Diagnosis of Tuberculosis. E. X. Mikol and R. E. Plunkett.—p. 1260.
Prevalence of Rheumatic Heart Disease in Denver School Children. Bernice G. Wedum, A. G. Wedum and A. L. Beaghler.—p. 1271.
A Public Health Role for the Laundry. M. E. Barnes.—p. 1277.
Distribution of Shigella in India as Determined by Spot Agglutination with Absorbed Serums. J. B. Nelson, C. Tenbroeck and G. J. Dammin.—p. 1282.
Background of Current Trends in Relation of Public Health to Medical Care. M. Terris.—p. 1287.
Method for Control of Sanitation in Food Processing Plants. R. H. Vaughn and Thressa C. Stadtman.—p. 1292.
Problems of Health Education in Latin America. G. Castillo.—p. 1297.
Treatment of Pediculosis Capitis. J. G. Molner.—p. 1302.
The Journal is 35 Years Old. R. M. Atwater.—p. 1305.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

54:437-540 (Nov.) 1945

*Roentgenographic Interpretation of Acute Hematogenous Osteomyelitis Treated with Penicillin. W. A. Altemeier and H. G. Reinecke.—p. 437.
Studies on Roentgen Death in Mice: Survival Time and Dosage. H. Quastler.—p. 449.
Studies on Roentgen Death in Mice: Body Weight and Sensitivity. H. Quastler.—p. 457.
Pneumoroentgenography with Oxygen in Diagnosis of Internal Derangements of Knee Joint. H. H. W. Brooke, W. C. MacKenzie and J. R. Smith.—p. 462.
*Miniature Chest Fluorography with Control Study. H. Hauser and C. C. Dundon.—p. 470.
*Miliary Carcinosis of Lungs Secondary to Primary Cancer of Gastrointestinal Tract. G. J. Culver.—p. 474.
Diaphragmatic Hernia and Dilated Esophageal Ampulla: Their Clinical and Diagnostic Significance. J. Abowitz.—p. 483.
Chronic Nonspecific Regional Enteritis. S. Brown.—p. 487.
Roentgen Examination in Congenital Intestinal Obstructive Defects in Infants: Its Aid in Planning Suitable Surgical Approach and Procedures for Their Correction. A. K. Wilson.—p. 498.
So-Called Fifth and Sixth Cerebral Ventricle: Clinical and Roentgenographic Study and Case Report. S. J. Silbermann.—p. 503.
Benign Giant Cell Tumor of Spine: Report of Case Occurring in Cervical Spine. E. H. Brock and F. B. Bogart.—p. 512.
Hypertrophic Osteoarthropathy: Case Report. E. M. Kline.—p. 519.

Roentgenograms in Osteomyelitis Treated with Penicillin.—Fifty-two patients with acute hematogenous osteomyelitis were observed by Altemeier and Reinecke. At first many received less than 800,000 units of penicillin, usually with good results, but a total dose of 1,500,000 or more units administered over a period of three or more weeks has been found to be desirable. The penicillin was administered intravenously or intramuscularly in amounts of 15,000 to 25,000 units at intervals of three hours. All patients recovered except 1 with severe and neglected acute hematogenous osteomyelitis of the tibia with staphylococcic pneumonia and bacteremia who was moribund when admitted. The roentgenograms during the first four to ten days do not aid in the diagnosis of acute osteomyelitis. Later in the disease roentgenographic changes varied with the age of the patient, the severity of infection, the duration of infection before treatment with penicillin, the adequacy of therapy and the type of infecting bacteria.

Miniature Chest Fluorography.—Hauser and Dundon submit evidence of the accuracy of findings in 1,000 subjects examined by the 4 by 5 inch miniature method in comparison with the standard 14 by 17 inch film. An x-ray unit was installed in the Department of Roentgenology at the University Hospitals of Cleveland to reduce the cost entailed in examining the chests of employees who constitute an unselected, apparently healthy, adult group. The cost of the smaller film is about one-sixth that of the conventional size without consideration of the saving in processing. Miniature and large roentgenograms were simultaneously obtained on the first thousand asymptomatic subjects examined. Precision in technic in miniature fluorography and experience in the interpretation of miniature films are necessary for the highest degree of accuracy. Twenty-four minimal pulmonary tuberculous lesions were detected in 1,000 examinations. Four errors were made in the first interpretation of the miniature films. Only one error was recorded on review of both sizes of films.

Miliary Carcinosis of Lungs Secondary to Primary Gastrointestinal Cancer.—Culver presents 4 cases of miliary carcinosis of the lungs from gastrointestinal cancer and traces the pathogenesis of the pulmonary lesions. In the chest roentgenogram the lesions are evenly and diffusely distributed throughout both lung fields such as would be expected with a hematogenous spread through the pulmonary circulation. The various lesions are not of homogeneous density but appear as soft mottled areas with fuzzy, poorly defined margins. Miliary tuberculosis and silicosis must be considered in the differential diagnosis. The lack of physical findings in spite of a severe pulmonary involvement is emphasized.

Annals of Surgery, Philadelphia

122:905-1160 (Dec.) 1945. Partial Index

*Use of Blood Plasma for Filling Pleural Space Following Total Pneumonectomy: Clinical Study. W. E. Adams, T. F. Thornton Jr. and L. M. Carlton Jr.—p. 905.
Chronic Leptomeningeal Thickening Following Treatment of Meningitis with Sulfa Drugs. P. Bailey.—p. 917.
Radical Resections of Advanced Intra-Abdominal Cancer. A. Brunschwig.—p. 923.
Surgical Relief of Tremor at Rest. P. C. Bucy.—p. 933.
Transthoracic Esophagogastrostomy for Benign Strictures of Lower Esophagus. D. E. Clark and W. E. Adams.—p. 942.
*Use of Penicillin in Treatment of Acute Hematogenous Osteomyelitis in Children: Report of 12 Consecutive Cases. E. L. Compere, W. J. Schnute and L. M. Cattell.—p. 954.
Blood Iodine Studies: Relation of Basal Metabolic Rate to Blood Iodine in Thyroid Disease. G. M. Curtis and M. B. Fertman.—p. 963.
*Vagotomy for Gastroduodenal Ulcer. L. R. Dragstedt.—p. 973.
Blood Pressure of Renal and of Early and Late Neurogenic Hypertension Dogs After Low Cervical Cord Section. K. S. Grimson. —p. 990.
Cutis Grafts: Clinical and Experimental Studies on Their Use as Reinforcing Patch in Repair of Large Ventral and Incisional Hernias. H. N. Harkins.—p. 996.
Pathogenesis of Localized Fibrous Lesions in Metaphyses of Long Bones C. H. Hatcher.—p. 1016.
Bilateral Adrenalectomy in Prostatic Cancer: Clinical Features and Urinary Excretion of 17-Ketosteroids and Estrogen. C. Huggins and W. W. Scott.—p. 1031.
Subtotal Replacement of Skin of Face for Actinodermatitis Due to Roentgenotherapy with Multiple Areas of Squamous Cell Carcinoma. H. P. Jenkins.—p. 1042.
Congenital Cataracts Following Rubella in Pregnancy. A. C. Krause. —p. 1049.
Headaches from Lesions of Scalp Nerves. F. E. Kredel.—p. 1056.
Osteomyelitis of Petrous Pyramid of Temporal Bone. J. R. Lindsay. —p. 1060.
Present Status of Ethylene-Oxygen Anesthesia. H. M. Livingstone. —p. 1071.
Resection of Left Lobe of Liver in Patient with Four Separate Carcinomas. J. van Prohaska.—p. 1092.

Blood Plasma for Filling the Pleural Space Following Pneumonectomy.—According to Adams and his associates, chief objections to pneumonectomy without thoracoplasty have been the hazard of serious infection of the pleural space and mediastinum, ill effects produced by overexpansion of the remaining lung and lowering of the blood plasma protein and tissue protein reserve, which is partly due to the filling of the pleural space with fluid rich in proteins. The results of the control experiments on animals revealed that the total blood proteins were reduced by as much as 25 to 30 per cent of their preoperative value. Replacement therapy in the form of blood or serum given intravenously, or serum intrapleurally, was quite effective in reducing the blood protein fall after pulmonary resection. Both methods of administration appeared to be effective. Blood protein determinations made by the micro-Kjeldahl method and hematocrit values were obtained before and at two day intervals for a ten to fourteen day period after thirty-two major operations, including fourteen lobectomies, five pneumonectomies, seven exploratory thoracotomies and six miscellaneous operations. The authors tested the influence of filling the pleural space with plasma following total pneumonectomy in man. They report results obtained on 18 patients receiving such treatment and on 10 additional patients used as controls without use of plasma. The incidence of complications following operation, including empyema, bronchial fistula, bronchitis, atelectasis and pneumonia, was much less in the group of patients whose pleural space was filled with plasma, being approximately 50 per cent of that of the control group.

Penicillin in Acute Hematogenous Osteomyelitis in Children.—Compere and his associates report 12 cases of acute hematogenous osteomyelitis controlled by penicillin or by a combination of penicillin and sulfonamides. Surgery was necessary in 4: in 1 for the removal of a small sequestrum and in 3 for the drainage of an abscess after the acute infection had subsided. Penicillin appears to be more effective in acute hematogenous osteomyelitis than any other therapeutic agent. Early use of penicillin in adequate doses administered at frequent intervals may not only cure the initial infection but prevent spread to other bones and in a majority of cases makes surgery unnecessary. If the penicillin is not started until after a bone has been extensively damaged, late surgery may become necessary. After the temperature begins to subside, the size of each dose of penicillin may be reduced, but the frequency of dosage must be maintained When the patient becomes afebrile the dosage may be reduced gradually and discontinued after five days of normal temperature. Recurrences may occur if penicillin is stopped too soon. In several cases there was a small, secondary temperature rise after the penicillin was stopped. It is important not to neglect well established principles of medical care, such as the maintenance of the fluid balance of the body through the administration of isotonic solution of sodium chloride, dextrose, plasma or blood Splints, plaster encasements or traction should be used when they are needed for supporting the diseased bone or to prevent contractures

Vagotomy for Gastroduodenal Ulcer.—Dragstedt says that the chief secretory abnormality in ulcer patients is the secretion of abnormally large amounts of gastric juice in the intervals between meals, particularly at night when the stomach is empty. Evidence has been obtained which suggests that hypersecretion of gastric juice by ulcer patients is neurogenic in origin. Animal experiments had revealed that section of the vagus nerves to the stomach greatly reduced the secretion of gastric juice. Vagus section has been performed on 39 patients. The vagus nerves of the stomach were divided in 30 patients with duodenal, in 2 with gastric and in 7 with gastrojejunal ulcers A striking and persistent relief of ulcer distress has been almost uniformly secured, with gain in weight and x-ray evidence of healing of the lesions. Section of the vagus nerves had no effect on the secretory response of the stomach to histamine or caffeine but abolished the response to insulin hypoglycemia and a sham meal The tonus and motility of the stomach were decreased but not abolished.

Archives of Neurology and Psychiatry, Chicago

54:319-456 (Nov.-Dec.) 1945

Anticonvulsant Activity of Sulfoxides and Sulfones H H. Merritt, T. J. Putnam and W. G Bywater—p 319
Polyopia and Monocular Diplopia of Cerebral Origin M. B Bender.—p 323
Human Pyramidal Tract· Study of Pyramids in Cases of Acute and Chronic Vascular Lesions of Brain A M Lassek—p 339.
Bilateral Intracranial Section of Glossopharyngeal Nerve: Report of Case H. Wycis—p 344
*Multiple Sclerosis with Late Onset of Symptoms A P. Friedman and C Davison—p 348
Ependymitis and Meningitis Due to Candida (Monilia) Albicans· Report of Fatal Case of Meningitis, with Comment on Its Clinical, Bacteriologic and Pathologic Aspects A A Morris, G G Kalz and E. S Lotspeich—p 361
Narcolepsy: Combat Experience of Soldier with Narcolepsy. H D Fabing—p 367.
Psychopharmacologic Study of Schizophrenia and Depressions Comparison of Tolerance to Sodium Amytal and Amphetamine Sulfate J S Gottlieb, H Krouse and A W Freidinger—p 372
Localizing Value of Vertical Nystagmus F. H. O'Brien and M. B. Bender—p 378
Emotional Trauma Resulting from Illegitimate Birth N. Fodor—p 381.
Experimental Evidence of Physiologic Mechanism of Certain Types of Headache A. P. Friedman, C. Brenner and H H. Merritt—p 385.
Unilateral Internal Ophthalmoplegia· Sole Clinical Sign in Patient with Syphilitic Meningitis M A Zeligs and G F Joseph—p 389.
Action of Acetylcholine on Motor Cortex: Correlation of Effects of Acetylcholine and Epilepsy. F. M. Forster—p 391.
*Changes in Cerebral Veins in Hypertensive Brain Disease and Their Relation to Cerebral Hemorrhage: Clinical Pathologic Study. I. M Scheinker—p 395.
Psychologic Studies on Patient Who Received Two Hundred and Forty-Eight Shock Treatments J. Perlson—p. 409

Late Onset of Symptoms in Multiple Sclerosis.—Friedman and Davison found that in 310 patients with multiple sclerosis admitted to the Montefiore Hospital the onset of symptoms after the age of 40 occurred in 41 (13 per cent). Of 42 patients with multiple sclerosis on whom autopsy studies were made at this hospital, the disease began in 9 (21 per cent) during or after the fifth decade of life. The case histories of these 9 patients were investigated in order to determine whether the symptoms and clinical course of the patients with a late onset of symptoms differs from that of patients with an onset early in life The diagnostic criteria of multiple sclerosis in the later years of life differ from those of the younger age group by showing a tendency to a progressive course, clearer evidence of intellectual deterioration and less evidence of dissemination of lesions.

Changes in Cerebral Veins in Hypertension.—Scheinker studied 65 typical cases of hypertension associated with massive cerebral hemorrhage In most of these cases two types of lesions were observed: (1) reversible changes, manifested by venous congestion and stasis, resulting in tremendous distention, and (2) structural alterations of the vessel wall, characterized by an extreme degree of atrophy and advanced signs of degeneration and necrosis Attention is directed to the predominantly venous origin of cerebral hemorrhage, which is considered as a terminal phase in a sequence of events which begin with reversible vascular disturbances. In a later stage structural alteration of the cerebral veins occurs, and terminal degeneration and necrosis of the vessel wall are present. In the presence of far advanced venular atrophy, elevation of venous pressure would appear to be an essential precursor to the massive escape of blood.

Archives of Pathology, Chicago

40:289-420 (Nov.-Dec.) 1945

Effects of Varying Degrees of Hypophysectomy in Dog A. D Keller, W. E Lawrence and Claudia B Blair—p 289
Relationship of Boeck's Sarcoid and Tuberculosis: Report of Case in Which Tuberculosis of Lymph Nodes Was Associated with Features Highly Suggestive of Sarcoid. J. R Dorgeloh and P. W. Tully.—p. 309
Diverticula (Luschka's Crypts) of Gallbladder. H E Robertson and W J. Ferguson—p 312.
Histologic Changes in Ovary and Uterus of Live Dirofilaria Immitis Recovered from Dogs Treated with Trivalent Antimony Compounds L L Ashburn, T. L Perrin, F. J. Brady and A. H Lawton—p 334
Renal Insufficiency Associated with Lymphopenia and Atrophy of Lymphatic Tissue in Man. R. L Holman—p 340.
Duplication of Vermiform Appendix, Large Intestine and Urinary Bladder· Report of Case. M L. Menten and Helen E. Denny.—p 345
Cancer in Relation to Usages· Three New Types in India V. R. Khanolkar and B Suryabai—p 351
Experimental Nephropathies V. Comparison of Toxic Action of Uranium, Mercury and Chromium on Kidneys. J. P. Simonds and Opal E. Hepler—p 362
*Bone Marrow in "Folic Acid" Deficiency and Its Response to Crystalline Lactobacillus Casei Factor ("Folic Acid"). K M. Endicott, F. S. Daft and Maurine Ott—p. 364.
Experimental Atherosclerosis: Effect of Feeding Olive Oil on Absorption and Deposition of Cholesterol. S. Member and M Bruger.—p 373
*Loeffler's Syndrome: Report of Case, with Pathologic Examination of Lungs E C. Bayley. D. O N Lindberg and A. H. Baggenstoss.—p 376

Bone Marrow and Folic Acid Deficiency.—Endicott and his associates found that leukopenia, granulocytopenia and, less frequently, anemia develop in rats given succinylsulfathiazole in purified diets, and that the Lactobacillus casei factor (folic acid, or vitamin B_c) corrects or prevents these dyscrasias. The involved marrow is hypocellular and shows general depletion, especially of the myeloid series. The erythroid series is usually depleted even though anemia may not be found. The response of the marrow to folic acid is a rapid regeneration with spectacular myeloid proliferation When anemia is also present the erythroid series becomes hyperplastic and later is crowded out by myeloid hyperplasia. The marrow returns to normal after temporary overcompensation. From the pathologist's point of view the chief importance of experimental granulocytopenia and agranulocytosis and anemia of this type lies in its unique adaptability to research.

Loeffler Syndrome.—Bayley and his associates report the results of the postmortem examination of a woman aged 59 who died of Loeffler's syndrome. The examination was limited to the study of the lung. The bronchial lesions were similar to those observed in bronchial asthma. The predominantly eosinophilic exudate infiltrating all portions of the wall, the hyalinization and thickening of the basement membrane of the epithelium and the presence of large quantities of mucus in the cells and lumens were all typical of bronchial asthma The advanced organization of the pneumonic exudate and the granulomatous character of the focal lesions constitute overwhelming evidence that the pulmonary lesions are not "transitory" in all cases The most *striking vascular change* was that of necrotizing arteritis and arteriolitis, *which histologically* appeared quite similar to the change observed *in periarteritis* nodosa It also suggests that there is an underlying allergic basis in Loeffler's syndrome

Bulletin of Johns Hopkins Hospital, Baltimore

77:345-410 (Nov) 1945

Epivascular Choroidal *Pigment Streaks, Their Pathology* and Possible Prognostic Significance R O Scholz —p 345
Significance of Streptococci Isolated from Female Urinary Tract I G Schaub *and* J E Davis —p 372
Clinical and Electrocardiographic Response to N Methyl*nicotinamide* Chloride Administration in Man G A Vance —p 393
Lipid Response to Vitamin A Administration Possible Test for Vitamin A Deficiency H W *Josephs* —p 402

Canadian Journal of Public Health, Toronto

36:455-486 (Dec) 1945

Mapping Our Frontiers of Health B *Claxton* —*p* 455
Educating Food Handlers R G Knipe and M J Harper —p 465
Moral and Social Aspects of Venereal Disease Control C E Silcox —*p 472*
Method for Rapid Production of Citrinin J Wyllie —p *477*

Connecticut State Medical Journal, Hartford

10:1-92 (Jan) 1946

"Timeo Danaos Dona Ferentes" (*National Health Program*) *R I Lee* —p 1
National Health Program M Fishbein —p 5
Practical Facts About *Salmonella Infections* E K *Borman* —p *16*
Expansion of Connecticut Cancer Program M H Griswold —p 18
Duplication Cyst of Terminal Ileum with Acute Inflammatory Reaction Report of Case K T *Phillips* —p *21*
Adenocarcinoma of Jejunum Arising Around Polyps G P Cheney and C M Mezey —p 23
Vitamin D Poisoning Hypercalcemia—Case Report I W Kingsbury —p 25
Plan to Augment Graduate Medical Training H Thoms —p *26*
Provision of Better Medical Care J A Curran —p 28

Florida Medical Association Journal, Jacksonville

32:*337-396* (*Jan*) *1946*

*Dicumarol Therapy in Acute Coronary Thrombosis Results in Fifty Attacks, with *Review of Data on Embolic Complications* and *Immediate* Mortality in Myocardial Infarction E S Nichol and S W Page Jr —p 365
Rehabilitation of War Worn Civilian W C McConnell —p 371
Loeffler s *Syndrome* M S *Saslaw* and J A Bowman —p 373

Dicumarol in Acute Coronary Thrombosis.—Nichol and *Page used dicumarol in* 50 consecutive episodes of acute coronary thrombosis with myocardial infarction occurring in 44 patients All except 2 were hospitalized A *history of previous* myocardial infarction was noted 20 times, 2 previous attacks *occurring* in 4 cases Eight patients treated with dicumarol died within, six weeks of the onset of acute coronary thrombosis All of the 26 patients who were treated in their first attack survived Six necropsies did not reveal *mural thrombi* or systemic or pulmonic *embolic phenomena Only in* 1 case was there clinical *evidence of pulmonary* embolism, and in this *case the dose* was ineffective Dicumarol, a safe drug if used *intelligently*, probably decreases the immediate mortality rate in acute coronary thrombosis It appears to prevent pulmonary and systemic vascular embolization and thrombosis if used in an adequate amount

Hawaii Medical Journal, Honolulu

5:69-98 (Nov -Dec) 1945

Mumu A Few Facts About *Filariasis* for Folks Who Fear That *Filaria* Infected Fellows *Will Fetch Filariae from Front* R N Babione —p 69
Congenital Anomalies of Coronary Arteries H J Frachtman —p 72
Gastrojejunal Ulcer as Related to Gastroenterostomy *J* E Strode —p 76
Bronchiectasis F Raine —p 78
Diagnosis and Treatment of Lung Abscess and *Acute Empyema* G Finney —p 82
Hemorrhage from Meckel's Diverticulum in Infancy Report of Case. W B Patterson —p 85

Journal Industrial Hygiene & Toxicology, Baltimore

27:*239-274* (Nov) 1945

Studies of Effects of Ammonium Picrate on Man and Certain Experimental Animals F W Sunderman, F D Weidman and O V Patson —p 241
Observations on Fujiwara Reaction as Test for Chlorinated Hydro*carbons* F J Webb, K K Kay and W E Nichol —p 249
Animal Studies on Toxicity *of Inhaled* Antimony Trioxide C U Dernehl, C A Nau and H H Sweets —p 256
Observations on Effects of Gamma Valerolactone on Experimental Animals W B Deichmann, R Hirose and S Witherup —p *263.*
Calcium Cyanide Solutions as Constant *Sources of Hydrogen* Cyanide Gas for Animal Experiments W A Robbie and P J Leinfelder —p *269*

Journal of Nervous and Mental *Disease, New York*

102:537-650 (Dec) 1945

**Pituitary Adenoma* Associated with Chronic Duodenal Ulcer J E Pisetsky —p 537
Reflex Differences in Hypoglycemic Schizophrenics, with Few Remarks *on Possible Role of Right Hemisphere* in Production of Some "Mental Symptoms H H Fleischhacker —p *547*
Psychiatric Evaluation of Naval Personnel Returning from Combat and Overseas Duty J B Dynes and N N Springer —p *564*
Significance of *Depth of Physiologic Cup of Optic* Disk for Mental Ability M Ostow —p 571
Diagnosis and Classification of Neurotic States Reinterpretation of Eysenck's Factors R B *Cattell —p 576*
Combat Induced Anxiety State as Seen After Return to Duty P Chodoff —p 590
Aminoacetic Acid (Glycine) in Treatment of Depression M H Weinberg —p 601

Pituitary Adenoma and *Chronic Duodenal Ulcer.*—Pisetsky reports a case of pituitary adenoma and visual *disturbances* dating back twenty-four years, associated with a chronic duodenal ulcer for more than eight years Since irradiation of the tumor six years before, with the exception of occasional gastric complaints, the symptoms subsided Disturbances in impulse formation in the cortex and hypothalamus as a result of pressure produced by the tumor result in increased gastric peristalsis, *hypersecretion and vasoconstriction,* which *produce ischemia and then erosions* ulcerations *or perforation of the* stomach wall

J. Neuropathology & Exper. Neurology, Baltimore

4:305 412 (Oct) 1941

Pathology of Injury *to* Nerve Induced by Cold D Denny Brown R D Adams C Brenner and Margaret M Doherty —p 305
Degeneration *of Basal Ganglia in Monkeys from* Chronic *Carbon* Disulfide Poisoning R Richter —p 324
Toxic Productive Encephalitis Pathologic Study G B Hassin —p 354
Blood Vessel Hyperplasia Masking Glioblastoma Multiforme Report of Case C V Z *Hawn and* F D Ingraham —p *364*
Intrasellar Meningioma and Multiple Cerebral Glioblastomas W R Kirschbaum —p *370*
Cerebellar Atrophy I Analysis of Various Forms and Analytical Scheme for Their Study B W Lichtenstein —p *379*
Hemosiderin and Tissue Iron in Brain, Its Relationship Occurrence and Importance *Study on 93 Human Brains* G Strassmann —p 393
Occurrence and Distribution of Acid Fast Pigment in Central Nervous System A Wolf and A M *Pappenheimer* —p *402*

Journal of Nutrition, Philadelphia

30:*395 504* (*Dec*) 1945

Nicotinic Acid and Level of Protein Intake in Nutrition of Pig M M Wintrobe, H J Stein, R H Follis Jr and S Humphreys —p 395
Therapeutic Effect of Yeast and Pyridoxine on Poikilocytosis in Dairy *Cattle J T* Reid, C F Huffman and C W *Duncan* —*p* 413
Field Illumination and Commercial Handling as Factors in Determining Ascorbic Acid Content of Tomatoes Received at Cannery G F Somers, K C Hamner and W L Nelson —p *425*
Effect of Manufacturing Methods on Ascorbic Acid Content and Consistency Characteristics of Tomato Juice W B Robinson, F Stotz and Z I Kertesz —p 435
Elimination and Distribution *of Selenium in* Tissues in Experimental Selenium Poisoning Irene Rosenfeld and O A Beath —p 443
*Secretion of Vitamin D in Milks of Women Fed Fish Liver Oil L J Polskin, B Kramer and A E Sobel —p 451
Vitamin A Requirements in Calves J M Lewis and L T Wilson —p 467
Influence of Ascorbic Acid *on* Activity of Gonadotropic Hormones in Guinea Pigs *J* T Reid and *J* F Sykes —p *477*
Availability of Iron in *Hawaiian Grown* Vegetables C D Miller and Lucille Louis —p 485

Vitamin D in Milk of Women Fed Fish *Liver Oil.*—Polskin and his co-workers determined the vitamin D content of human milk following *the ingestion of fish oils* containing the antirachitic *vitamin* Vitamin D *in the form of* mixed fish liver oil was supplied in a single dose of 32,000 U. S. P. XI units by capsule at each weekly visit. A total of 59 patients were studied in all, 21 of whom served as controls and received no vitamin D supplement. The vitamin D level in the milks of 18 of the controls was inappreciable, ranging from traces to less than 10 international units per quart. Three women showed values of 17, 28 and 40 international units per quart. The average vitamin D content per quart of milk of mothers supplied during the latter half of pregnancy was 10 international units for 7 mothers given from 32,000 to 96,000 international units of supplement, 53 international units for 9 mothers given from 128,000 to 224,000 international units of supplement, 62 international units for 5 mothers given from 256,000 to 320,000 international units of supplement and 53 international units for 6 mothers given from 416,000 to 480,000 international units of supplement. Two mothers given a single dose of 32,000 international units during labor secreted milks from three to eight days later which bioassayed 91 and 216 international units per quart. Seven women given 40,000 international units of vitamin D daily from labor to about ten days later yielded milk the vitamin D content of which averaged 310 international units per quart. For the purpose of fortifying human milk with vitamin D for infant use, supplementation of the mother with fish liver oil during pregnancy is not a practical method. Vitamin D must be taken just prior to or during lactation in order to enrich the milk with the factor appreciably.

Journal of Pediatrics, St. Louis

27:505-628 (Dec.) 1945

*Penicillin Treatment of Pneumococcic Meningitis in Infants. Gretchen Hutchins and J. A. V. Davies.—p. 505.
*Prevention of Rheumatic Recurrences in Children by Use of Sulfathiazole and Sulfadiazine. R. E. Wolf, Louise W. Rauh, and R. A. Lyon.—p. 516.
Rickets: Study of Calcium and Phosphorus Metabolism and of Clinical Findings as Influenced by Certain Feedings. J. R. Gerstley, D. J. Cohn and Grace Lawrence.—p. 521.
Proctologic Problems of Pediatrician. E. F. Patton.—p. 532.
Heterophile Antibody Reaction in Infants and Children. J. Diamond and J. S. Sennott.—p. 540.
Sedatives and Stimulants in Pediatric Practice. H. Gold.—p. 546.
Chorea in Negro Race. W. A. Daniel Jr.—p. 554.
Tracheotomy in Bulbar Poliomyelitis. D. F. Glaser.—p. 560.
Cardiospasm in Newborn. P. P. Vinson.—p. 565.
Meningitis Caused by Type F Hemophilus Influenzae: Report of Case, with Recovery. J. G. Parke.—p. 567.
Treatment with Antiserum of Acute Laryngitis Caused by Hemophilus Influenzae. R. G. Jordan and J. R. Turner.—p. 572.
Meningococcic Meningitis: Report of Multiple Cases Occurring in Same Family. C. C. Rotondo and N. I. Handelman.—p. 576.
Cystic Tuberculosis of Bone in Case of Miliary Tuberculosis. R. J. Blattner and Chieh Sung.—p. 579.
Arachnodactyly—Unusual Complication Following Skull Injury. W. F. Schneider.—p. 583.
Treatment of Acute Suppurative Parotitis in Infants. E. B. D. Neuhauser and B. G. Ferris Jr.—p. 589.
Hereditary Skin Defect in Newborn Infant. P. Freud, A. W. Rhodes and A. Weisz.—p. 591.
Generalized Vaccinia and Probable Induced Thiamine Deficiency in Congenitally Hypothyroid Child. E. M. Gropper, C. Lamanna and C. A. Stewart.—p. 595.
Greenberg Modification of Flagg Laryngoscope—Its Use in Asphyxia Neonatorum. L. J. Greenberg.—p. 602.

Penicillin in Pneumococcic Meningitis in Infants.—Hutchins and Davies report 14 cases of pneumococcic meningitis in children under 2 years of age treated with penicillin. In 7 some form of sulfonamide had been administered at various intervals before hospitalization. A number of the children were given sulfadiazine during hospitalization either for complications or for reasons associated with meningitis. The earlier patients and smaller infants were given penicillin intramuscularly on a dosage schedule of 3,000 units every three hours. The other patients were given 5,000 units every three hours. The schedule of intrathecal therapy was 10,000 units twice a day (or three times a day for the first few days) in an aqueous or saline solution containing 1,000 units per cubic centimeter. When blocks occurred so that spinal fluid could not be obtained by the lumbar route, penicillin was given intracisternally when possible and intraventricularly in a few cases. Penicillin was administered by the intrathecal route for an average of eleven days. Recoveries, either intact or with residual damage to the brain, were significantly more frequent than with sulfonamides and type specific antiserum. Of 14 infants, 9 survived.

Prevention of Rheumatic Recurrences by Use of Sulfonamides.—Wolf and his associates state that a group of 70 children receiving sulfathiazole or sulfadiazine for a total of 81 patient seasons did not have recurrences of rheumatic fever during the periods of treatment. One child developed a recurrence during a summer season between courses, and another developed subacute bacterial endocarditis during the same period. A third child developed subacute bacterial endocarditis while being treated. Albuminuria occurred in 9 patients receiving sulfadiazine, which in 4 instances was so severe that the drug was withdrawn. Mild leukopenia occurred in 4 patients, 2 receiving sulfadiazine and 2 sulfathiazole, but the number of white cells quickly returned to normal when the drug was withdrawn for a few days. The prophylactic treatment with sulfonamides should be continued throughout the year. In many cases it would seem advisable to administer the drug continuously for several years.

Journal of Thoracic Surgery, St. Louis

14:415-502 (Dec.) 1945

*Traumatic Wet Lung: Observations on Certain Physiologic Fundamentals of Thoracic Trauma. T. H. Burford and B. Burbank.—p. 415.
Use and Control of Thoracic Surgical Teams of Auxiliary Surgical Group. J. H. Forsee.—p. 425.
Full Thickness Flap Closure of Large Thoracotomy Due to Chemical Destruction of Chest Wall. W. H. Prioleau.—p. 433.
Penicillin in Pulmonary Resection: Preliminary Report. A. R. Valle and L. White Jr.—p. 437.
Cylindroma of Bronchus: Report of 6 Cases. J. R. McDonald, H. J. Moersch and W. S. Tinney.—p. 445.
Spontaneous Pneumothoraces Occurring in Patients Undergoing Peroral Endoscopy. O. A. Abbott and H. R. de Oliveira.—p. 453.
Experimental Hemothorax. D. W. Melick and Maryloo Spooner.—p. 461.
Nerve Block in Treatment of Thoracic Injuries. L. J. Fitzpatrick and A. J. Adams.—p. 480.
*Recovery from Hemolytic Staphylococcus Aureus Bacteremia Attributed to Penicillin Therapy: Case Report. T. H. Burford, P. C. Samson, L. A. Brewer III and B. Burbank.—p. 483.
Aneurysm of Subclavian Artery in Infant: Report of Case. R. A. Daniel Jr.—p. 487.

Traumatic Wet Lung.—As members of thoracic surgical teams, Burford and Burbank treated 1,500 patients with thoracic trauma. They call attention to the fact that in wounds of the chest the lung tissue reacts to produce more than the normal amount of interstitial and intra-alveolar fluid. The bronchopulmonary tree has more fluid to remove but is less capable of doing so. The result of these two phenomena is what may be called the "wet lung" of trauma. Failure to take cognizance of this fact will frequently lead to death or to the establishment of chronic pulmonary invalidism. The patient with early wet lung is apprehensive. Dyspnea is present and is accompanied by paroxysms of a painful cough which is not effective in emptying the bronchopulmonary segments. There is restriction of motion of the involved side. The most striking feature is the presence of rales, which are bronchial in character and consist of wheezes and rhonchi. Therapy must control the production of moisture and promote adequate bronchial drainage. Pain, which interferes with an effective cough mechanism, must be combated. Adhesive strapping and the use of morphine are physiologically unsound and ineffectual. The authors have used procaine either at the site of injury, by intercostal nerve injection or by thoracic paravertebral sympathetic nerve block, with gratifying results. The cough becomes painless and effective. The patient will often pass from an alarming state to one of comparative comfort and safety within a few minutes. Some of these patients will require mechanical evacuation of the bronchial tree. Some will present evidence of persistent moisture after nerve block and aspiration. For these the administration of atropine may be of value.

Penicillin Therapy in Hemolytic Staphylococcus Aureus Bacteremia.—Five days after being wounded in the right chest, a man was found to have a serrated missile, measuring 3 by 4 cm., lying in the right pleural cavity, a moderate degree of pathologic change within the lungs and clotted hemothorax. During the subsequent five days the intrapulmonary lesions cleared to a considerable extent and a right posterolateral thoracotomy was done. The intrapleural foreign body was removed and the organizing clot evacuated. Seven days after operation the temperature rose and the patient complained of pain in the wound, which was somewhat indurated. On the following day hemolytic Staphylococcus aureus was found and subsequently suppuration appeared, which was drained. Later, when a blood culture revealed hemolytic Staph. aureus, treatment with sodium sulfathiazole was started, but infected emboli appeared in the extremities. Sulfathiazole therapy was stopped and treatment with penicillin was begun. Burford and his associates state that the response to penicillin was dramatic and conclusive. Of particular significance was the recrudescence of the infection with the temporary cessation of penicillin therapy and the prompt regression of signs and symptoms on the resumption of the agent.

Military Surgeon, Washington, D. C.

98:1-88 (Jan.) 1946

*Solid Blast Personnel Injury: Clinical Study. J. S. Barr, R. H. Draeger and W. W. Sager.—p. 1.
What Is Happening to Britain's Wounded Now? F. A. M. Webster.—p. 13.
Diagnosis of Migraine in Flying Personnel. D. B. Davis and J. W. Bick Jr.—p. 17.
Review of 18 Cases of Arthrotomy of Knee Joints. L. I. Thomas.—p. 20.
Local Prophylaxis for Gonorrhea: Improved Technic. E. Granet.—p. 25.
Rheumatic Fever-like Syndrome Caused by Microaerophilic Streptococcus, with Favorable Results on Penicillin Therapy: Report of Case. M. R. Moore and R. B. Hemphill.—p. 27.
Ladder Splint with Regulation Litter for Broken Back. C. D. Donahue and H. R. Allumbaugh.—p. 35.
Fractures in Electroshock Therapy as Related to Roentgenographic Spinal Findings. J. H. Huddleson and H. L. Gordon.—p. 38.
Hyperextension Back Brace for Treatment of Compression Fractures of Vertebrae. C. H. Bradford and W. C. Graham.—p. 40.
Significance of Salt (NaCl) in Torrid Temperatures. L. Rosenbaum.—p. 43.
Effect of Procaine on Inhibitory Factor of Penicillin. F. P. Hesser and M. Golland.—p. 47.
Suggestions in Eye Education. N. P. Popov.—p. 48.
Methods for Determination of *p*H and Salinity as Field Tests in Control of Anopheline Mosquitoes. S. Kaye.—p. 50.

Solid Blast Injury.—Barr and his associates studied 50 cases of solid blast injury of sufficient severity to require evacuation to naval hospitals in the United States. This injury is a definite clinical entity caused by the shock wave from an explosion transmitted through solid material, usually steel, to personnel in contact with this material. In the typical case there are fractures of the lower extremities, with extensive soft tissue damage. Fractures of the os calcis occurred in 15 instances. There were 15 fractures involving the astragalus, and in each case there were associated fractures of contiguous bones. Fractures of the distal tibia occurred in 20 instances, 10 of them compound. Injuries involving the ankle and the tarsal bones occurred in 18 of the 50 cases and are the most common and characteristic among the solid blast injuries. Fractures of the shaft of the tibia and fibula occurred 9 times (4 compound). Fractures of the upper end of the tibia involving the knee joint occurred 14 times (2 bilateral). Ten legs were amputated soon after injury because of gangrene subsequent to irreversible damage to the circulation. In 4 cases the amputation was bilateral. In the majority of these cases the popliteal artery had been torn by dislocation of the knee joint, with or without fracture. These patients all received satisfactory first aid treatment. Proper early surgical management and late reconstructive procedures will restore the majority of the limbs to useful function.

New England Journal of Medicine, Boston

233:799-832 (Dec. 27) 1945

Primary Anastomosis in Carcinoma of Colon. H. M. Clute and F. R. Kenney.—p. 799.
Thiouracil as Cause of Neutropenia and Agranulocytosis. M. F. Lesses and S. L. Gargill.—p. 803.
Clinical Significance of Data Accumulated in Medical Care of Young Women. H. L. Hardy.—p. 811.
Menstruation, Its Disorders and Their Treatment. J. Rock.—p. 817.
Subacute and Chronic Glomerulonephritis Developing in Congenital Polycystic Kidneys.—p. 824.
Acute Pancreatitis, with Fat Necrosis.—p. 826.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Australian and New Zealand J. Surgery, Sydney

15:1-72 (July) 1945

The University and the Medical Profession. J. D. G. Medley.—p. 3.
Carcinoma of Rectum, with Special Reference to Sphincteric Control. J. A. Jenkins.—p. 15.
Traumatic Injuries of Peripheral Nerves: Analysis of Incidence in 301 Consecutive Cases of Peripheral Nerve Injuries. S. Sunderland.—p. 25.
Slowness and Failure of Bony Union After Fractures and Osteotomies of Proximal or Trochanteric End of Femur. T. King.—p. 33.

Brain, London

68:79-166 (June) 1945

Transient Disturbances Following Gunshot Wounds of Head. W. R. Russell.—p. 79.
Study of Pupillary Inequalities in Man. E. A. Turner.—p. 98.
Adipose Tissue of Peripheral Nerves. S. Sunderland.—p. 118.
Abnormal Suppression of Cortical Frequencies. D. Williams and Joan Reynell.—p. 123.
Spinal Tracts Subserving Micturition in Case of Erb's Spinal Paralysis. J. McMichael.—p. 162.

British Heart Journal, London

7:161-220 (Oct.) 1945

*Mercurial Diuretics: Intolerance as Shown by Skin Sensitivity. A. Burrows and W. Stokes.—p. 161.
*Effects of Emetine on the Heart. J. D. Cottrell and G. W. Hayward.—p. 168.
*The Carotid Shudder. W. Evans and D. Lewes.—p. 171.
Quantitative Electrocardiographic Method. H. E. S. Pearson and L. M. Gerlis.—p. 173.
Case of Myxoma of the Heart. W. Burnett and Jane I. Davidson.—p. 180.
Paroxysmal Tachycardia and 2:1 Heart Block. M. Campbell.—p. 183.
*Immersion as a Factor in Development of Hypertension. O. Garai.—p. 200.

Intolerance to Mercurial Diuretics.—Burrows and Stokes report 9 cases of skin reactions to mercurial diuretics, in 1 of which a severe reaction was accompanied by manifestations of an acute nephritic nature and by stomatitis. The other 8 in which mercurial diuretics were administered gave only the skin signs. Sensitization, idiosyncrasy or allergy may be of different degrees. Skin rashes and itching without other complications seem to indicate moderate sensitivity. There appears to be a threshold concentration of mercury in the blood above which signs of allergy develop, and this may vary with the individual patient. An injection of a mercurial diuretic did not cause a rash when a patch test immediately preceding it was negative. Accordingly this test should be useful when accumulation of the drug is suspected or when continuation of treatment is desirable after cutaneous sensitization. Sensitivity, as shown by patch testing, may be lost after a brief period of rest from the drug. Cutaneous sensitization to mercury need therefore not contraindicate the subsequent employment of these diuretics in adjusted dosage after a short interval.

Effects of Emetine on the Heart.—Cottrell and Hayward found that diminution or inversion of the T waves occurred in one or more leads in 25 out of 32 cases of amebiasis in which emetine was employed. In 12 cases there was an increase in the PR interval of from 0.02 to 0.04 second. Similar changes occurred during treatment with bismuth iodide, 7 out of 8 cases showing diminution in T waves and prolongation of the PR interval. The cardiogram returned to normal from eight to twelve days after the completion of treatment. The effect on the blood pressure and pulse rate of both drugs was insignificant, and there was no clinical evidence of myocardial insufficiency.

The Carotid Shudder.—In 9 patients in whom subsequent clinical, cardiographic and cardioscopic examination established the presence of aortic stenosis and incompetence Evans and Lewes observed a characteristic sign which permitted a diagnosis of the combined aortic lesion from inspection of the neck. At the height of the carotid pulse, large on account of aortic incompetence, they noticed a quiver or vibration which lasted for only a moment. This effect they have named the "carotid shudder." Only a proportion of patients with combined aortic stenosis and aortic incompetence exhibit carotid shudder, but the fact that they were able to observe 9 such cases in eighteen months emphasizes its common occurrence. The clinical sign was not present in patients in whom aortic incompetence or aortic stenosis existed separately.

Immersion as Factor in Hypertension.—Garai studied a group of 15 physically fit men of the merchant navy, all of whom had been shipwrecked and exposed to cold and immersion. To act as controls, a group of nonimmersed neurotic men and a group of nonimmersed non-neurotic men were also tested in the same manner. The response of shipwrecked men to a standard "cold pressor test" (immersion of the hand in ice water and determination of blood pressure changes) was different from that of the two control groups, who had not been exposed to wet and cold. The author concludes that this tends to support the hypothesis that exposure if severe and prolonged can have a damaging effect on the normal kidney.

British Journal of Radiology, London

19:1-44 (Jan.) 1946

Anatomy of Blood Vessels of Human Lung as Applied to Chest Radiology. T. Lodge—p. 1.
Energy Absorption in Radium Therapy. F. Bush.—p. 14.
Recent Advances in Investigation of Small Intestine. W. Tennent. —p. 22.
Feed-Back Amplifier for Ionization Currents. F. T. Farmer.—p. 27.
External and Internal Thorium X Therapy. K. F. Nagelschmidt.—p. 31.
Review of Recent French Literature on Radiotherapy. H. C. Simchowitz.—p. 36.
Effect of X-Rays on Leishmania Tropica in Vitro. B. Feldman-Muhsam and L. Halberstaedter.—p. 41.

British Medical Journal, London

2:873-910 (Dec. 22) 1945

Estimation of Serum Proteins by Linderström-Lang Gradient. H. Hoch and J. Marrack.—p. 876.
Liver Function in Infective Hepatitis Gaged by Hippuric Acid Synthesis Tests. M. R. Pollock.—p. 878.
Management of Recent Fracture Dislocation of Cervical Spine. A. N. Guthkelch.—p. 880.
Therapeutic Efficiency of Ultraviolet Light Apparatus. B. C. Elliott. —p. 881.
Anti-M Isoagglutinins in Human Serum. Marjory N. McFarlane. —p. 883.

2:911-952 (Dec. 29) 1945

Medicine and the State, with Special Reference to Emergency Medical Service. W. Elliot.—p. 911.
*Relation Between Congenital Obliteration of Bile Ducts and Icterus Gravis Neonatorum. M. O. Skelton and G. H. Tovey.—p. 914.
*The Rh Factor and Blood Transfusion: Observations on Group of Rh Negative Individuals Transfused with Rh Positive Blood. W. C. Moloney.—p. 916.
Asymptomatic Kala-Azar in Soldiers from Over Seas. T. G. Armstrong. —p. 918.
Four Cases of Russell's Viper Bite. P. H. Wyon.—p. 919.
Blindness Following Hematemesis. J. Black.—p. 920.

Congenital Obliteration of Bile Ducts and Icterus Gravis Neonatorum.—During the past three years Skelton and Tovey have observed several cases of hemolytic disease of the newborn in which there have been either clinical signs simulating congenital obliteration of the bile ducts or a history of this condition in other members of the family. They conclude that certain cases of so-called congenital obliteration of the bile ducts occur as sequels of icterus gravis neonatorum.

Rh Negative Patients Transfused with Positive Blood.—Moloney reports Rh studies on 138 wounded American soldiers transfused with whole blood at the 163d General Hospital. Of this group 18 were found to be Rh negative; they were investigated for the presence of Rh antibodies and also in regard to the survival of Rh positive cells in the circulation. There was evidence of abnormally rapid elimination of transfused Rh positive red cells from the circulation of some Rh negative recipients. While demonstrable antibodies were found in only 1 case, it is quite possible that isoimmunization and latent sensitization occurred in others of this group. The mechanism of rapid loss of Rh positive red cells from Rh negative recipients is obscure. Various extrinsic factors may have influenced this phenomenon, or some undetected antibody may play a part in this hemolytic process. The possibility that an activated reticuloendothelial system (or other cellular agency) may be involved in the rapid elimination of Rh positive cells deserves further study. From the practical standpoint, Rh negative persons should be transfused with Rh negative blood. While Rh isoimmunization may present few serious immediate reactions, the possibility of Rh sensitization should be avoided.

1:1-38 (Jan. 5) 1946

Surgery of Arterial Disease and Injury. J. P. Ross.—p. 1.
Observations on Cases of Starvation at Belsen. P. L. Mollison.—p. 4.
*D. B. E.: New Synthetic Estrogen. R. Greene.—p. 9.
D. B. E. in Treatment of Menopausal Symptoms. S. Way.—p. 10.
Concentrating Malaria Parasites in Thin Films. K. B. Rogers.—p. 11.

New Synthetic Estrogen.—The new synthetic estrogen discussed by Greene and designated as D. B. E. is the proestrogen α α-di-(p-ethoxyphenyl)-β-phenyl bromoethylene. It differs from estradiol and stilbestrol in that a small increase in the dose produces a great prolongation of action. It appears, therefore, that D. B. E. is stored in the body and slowly released. Greene investigated the efficacy of this substance in menopausal women, in men with carcinoma of the prostate and in patients with uterine atrophy. The only advantage of the drug seems to be its prolonged action. In some respects it is inferior to the other synthetic estrogens, and the author doubts that the advantage of weekly over more frequent administration of other estrogens is sufficient to warrant the general introduction of the new estrogen.

Lancet, London

2:801-836 (Dec. 22) 1945

Psychiatric Lessons from Active Service. G. W. B. James.—p. 801.
*Comparative Effect of Sulfonamide and Penicillin in Pneumonia. T. Anderson and Margaret S. Ferguson.—p. 805.
Mass Radiography. J. F. Brailsford.—p. 808.
Inguinal Hernia: New Muscular Internal Ring. W. J. M. Brandon. —p. 812.
Thoughts on Sprue After Experience in India. A. W. D. Leishman. —p. 813.
Infusion into Internal Saphenous Vein at Ankle. J. H. Kirkham. —p. 815.
Aseptic Necrosis at Sites of Continuous Intramuscular Penicillin Infusions. A. Nelson-Jones and G. E. O. Williams.—p. 817.

Comparative Effect of Sulfonamide and Penicillin in Pneumonia.—A series of 126 patients over the age of 35 who had pneumonia were divided into two groups, one receiving sulfathiazole and the other penicillin. All patients received the same symptomatic treatment and general clinical control. Each method achieved fairly similar results. Anderson and Ferguson think that properly controlled sulfonamide treatment for the average case should not be discarded and suggest that penicillin should be used for selected patients, usually in combination with a sulfonamide. A poor cardiovascular system is an indication for combined therapy. Extensive pulmonary involvement, severe cyanosis and dyspnea are other indications which may call for the support of chemotherapy with penicillin.

2:837-868 (Dec. 29) 1945

Speech and Handedness. W. R. Brain.—p. 837.
Symptoms of Early Pulmonary Tuberculosis. H. J. Trenchard.—p. 842.
*Penicillin Treatment of Serous Cavity Infections. I. W. J. McAdam, S. W. Challinor, J. P. Duguid and A. McCall.—p. 843.
Varicose Veins: Precipitation Method of Treatment. W. Thompson. —p. 849.
Injuries of Menisci: Diagnosis by Manipulation of Knee Joint. D. Brown.—p. 849.
Target Cell Anemia: Two Cases in Bucharan Jews. C. Schieber. —p. 851.

Penicillin in Serous Cavity Infections.—McAdam and his associates determined the levels of penicillin in the various body fluids following penicillin administration by different routes and different methods. The fluids examined included blood serum, pleural, pericardial, peritoneal, synovial and cerebrospinal fluids and pus from abscess cavities. The penicillin content of the fluids was approximately evaluated from a consideration of the dilution of the fluid which completely inhibited the growth of the standard staphylococcus. It was found that, provided the dosage is sufficiently high, systemic administration of penicillin produces adequate bacteriostatic levels in the exudates of infected body cavities, infected cerebrospinal fluid and abscess pus. The dosage of penicillin required to obtain an adequate bacteriostatic level in these exudates appears to be somewhat higher than that necessary for adequate serum bacteriostasis. Penicillin administered locally cannot be relied on to reach all sites of infection because of the pronounced tendency for loculation to occur in infections of serous cavities. Local administration of penicillin is therefore not a substitute for systemic administration, but it may be of some advantage because of the high bacteriostatic levels produced in the exudates. After local administration of penicillin into the peritoneum, a joint and the cerebrospinal fluid, the authors have obtained adequate bacteriostatic levels in the serum for from eight to eighteen hours.

Medical Journal of Australia, Sydney

2:353-384 (Dec. 1) 1945

*Patent Ductus Arteriosus. B. Shallard.—p. 353.
Surgical Treatment of Patent Ductus Arteriosus. B. T. Edye.—p. 362.
Anesthesia in Cases of Ligation of Patent Ductus Arteriosus. C. N. Paton.—p. 362.
Hypersensitivity to Horse Serum. P. W. Farmer.—p. 363.
Report of Treatment of 7 Cases of Granuloma Venereum with Penicillin. F. B. Turner.—p. 366.
Treatment of Furunculosis. J. V. Duhig.—p. 367.
Epidemic of Diarrhea Caused by New Strain of Salmonella Group. A. A. Ferris and R. Hertzberg.—p. 368.

Patent Ductus Arteriosus.—Of 14 patients operated on for patent ductus arteriosus 4 succumbed to operation, 2 from hemorrhage and 2 from other causes. One died from subsequent infective endocarditis. The patients successfully operated on have been followed up for periods varying from two to twenty-one months, and the results are uniformly good. As indications for surgical treatment Shallard lists (1) subacute bacterial endarteritis or endocarditis, (2) cardiac insufficiency and cardiac hypertrophy, (3) mental and physical retardation.

Archives Françaises de Pédiatrie, Paris

2:177-220 (No. 5) 1944-1945

*Case of Familial Adenomatous, Disseminated Polyposis of Large Intestine. Treatment by Total Colectomy. Leveuf, Laurence and Roueche. —p. 177.
Endocarditis Associated with Rheumatism in Young Children. R. Poinso and J. M. Laugier.—p. 187.
Hepatic Glycogenosis Revealed in Course of Angiocholitis. J. Boucomont and P. Cazal.—p. 196.
Rickets in Suckling Infants During Winter of 1942-1943. R. Sacrez, Miss R. Chapelo and Miss H. Leroux.—p. 199.

Polyposis of Large Intestine.—Leveuf and his associates report a case of familial, adenomatous, disseminated polyposis of the large intestine. A youth aged 18 had diarrhea and bloody discharge since the age of 11. At 17 the diarrhea and bleeding became profuse. There was considerable loss of weight. The father of the patient died from cancer of the rectosigmoid at 36, an uncle died from cancer of the splenic flexure at 32, the grandfather died from cancer of the liver at 46 and a great uncle died from an intestinal tumor at 30. The existence of adenomatous polyposis was not demonstrated in any of these cases. The patient was treated with irrigations of magnesium chloride through a cecostomy and orally. His general condition improved, but the polyps did not disappear. Colectomy was performed in two stages. The distal portion of the sigmoid and the rectum were conserved, and coagulation of the polyps was continued. The patient gained weight rapidly and returned to work. Roentgen therapy of adenomatous polyposis is uncertain and dangerous. Surgical treatment is recommended for the removal of the involved portion of the bowel for the prevention of the development of cancer, of intestinal obstruction, of hemorrhage and of ulcerative colitis. Subtotal colectomy, following low ileosigmoidostomy, and conservation of the rectum and its sphincter constitute the method of choice.

Presse Médicale, Paris

53:593-604 (Nov. 3) 1945

Sympathetic Ophthalmia: Its Place in General Pathology. J. Beauvieux and E. Bessière.—p. 593.
*Consideration of Age of First Importance for Interpretation of Statistics of Antidiphtheritic Vaccination. R. Rendu.—p. 594.
Five Years of Phosphorus-Calcium Deficiency: New Proof of Urgency of Indispensable Prophylactic Measures (Incorporation of Calcium in Bread and of Vitamin in Fats). H. and M. Hinglais.—p. 595.
Bilateral Lumbar Sympathectomy by Extraperitoneal Median Route. J. Kunlin.—p. 597.

Age and Antidiphtheritic Vaccination.—Age is of primary importance in the interpretation of statistics concerning vaccination against diphtheria. The incidence of diphtheria is on an average four times higher among children of preschool age than among those attending school. Vaccination is practiced more often among school children than among those not attending school. The average age of children in Paris who have not been vaccinated is 5 years, whereas the average age of the vaccinated is 8 years in spite of the fact that antidiphtheritic vaccination is obligatory in France. Paris hospital statistics show that diphtheria is two to three times more often fatal in children during the first six years of life than in those between the ages of 6 to 14 years. Paris hospital statistics published in 1944 showed a 7.1 per cent fatality rate among the vaccinated and a 9 per cent rate among the nonvaccinated children, but the age of the nonvaccinated was considerably lower than that of the vaccinated. Rendu concludes that the incidence of diphtheria is much lower and the disease is less severe among the vaccinated children as compared with the nonvaccinated. This fact depends on the difference in age of the two groups rather than on the effect of vaccination. Valid conclusions cannot be drawn from statistics in which the vaccinated persons are compared to the nonvaccinated whose average age is not the same.

53:633-652 (Nov. 24) 1945

Radiographic Examination of Club Foot. P. Marique.—p. 633.
Experimental Estrus: Attempted Interpretation of Action of Substances with Estrogenic and Cancerigenic Effect. H. Bulliard and I. Grundland.—p. 634.
Pseudoneoplastic Deformations of Antrum in Ulcer of Small Curvature. R. A. Gutmann.—p. 636.
*Arterial Lesions of Silicotic Blocks. L. Croizier, L. Ode and L. Roche. —p. 638.
Lobstein's Disease, Hereditary Syphilis and Rickets. F. Masselot and Arrighi.—p. 639.

Arterial Lesions of Silicotic Blocks.—Necropsies on miners who die of silicosis frequently reveal the existence of "blocks," hard fibrous masses occupying all or part of a pulmonary lobe. Microscopic examination of these lesions has shown considerable alteration in the arterioles which irrigate these lobes. Under the microscope the blocks appear practically avascular, but the vascular changes can be demonstrated by postmortem arteriopneumography. Croizier and his associates explain that after the lungs have been removed the pulmonary artery is injected with diluted barium oxide and the specimen is examined by x-ray, so that the vascular involvement of the silicotic blocks is put in evidence in its entirety. There exists from the onset a perivascular fibrous casing which encloses equally lymphatics, veins and pulmonary bronchi. The arteries are the elements that resist the longest. The most serious vascular lesions are in the region of the silicotic blocks. There is obliteration by thrombosis, with thickening of the intima and changes caused by distention of the elastic elements. The lesions terminate in total disintegration in a mass of sclerotic tissue. The role of tuberculosis in this process is debatable. While there is evidence that it is of importance, it is not always present. The vascular lesions appear early, and it is probable that the arterial involvement, associated with venous, lymphatic and bronchial lesions, is an important factor in the rapid evolution of the pneumonoconioses of miners.

53:653-664 (Dec. 1) 1945

Chronic Agranulocytosis in Radiologist. C. Aubertin.—p. 653.
*Antidiphtheritic Staphyline, New Microbic Antagonist. R. Duliscouet. —p. 653.
Analysis of Diabetes Insipidus. R. Kourilsky.—p. 655.
New Ocular Test for Alimentary Deficiency. R. Weekers and F. Roussel. —p. 656.

Antidiphtheritic Staphyline.—Duliscouet reports experiments in vitro and in guinea pigs which demonstrate that the antagonistic or active strains of staphylococci produce a lysogenic substance which prevents the growth of the Loeffler bacillus. The antagonistic effect of this substance is identical with that of the strain by which it is produced. This effect is manifested on growth of the diphtheria bacillus; the action of the diphtheritic toxin is not influenced. Two stages are to be considered in the development of this antagonism: The first is the preparatory stage during which the active staphylococcus assimilates the culture medium and multiplies. This multiplication ends in the formation of a specific, active, bacteriolytic principle.

Progrès Médical, Paris

73:401-432 (Dec. 10) 1945

Present Knowledge of Physiologic Action of Procaine Hydrochloride. P. Hazard.—p. 403.
Intravenous Procaine Hydrochloride. M. P. Ameuille.—p. 407.
*New Therapeutic Application: Intravenous Procaine Hydrochloride; Surgical Aspect of This Drug. A. Berthelemy.—p. 413.
Cryptoleukemia with Clinical Course of Pseudocirrhosis: Brutal Onset with Symptoms Simulating Appendicitis. B. Muller.—p. 415.

Intravenous Procaine Hydrochloride in Surgery.—Berthelemy reports the results of intravenous injections of procaine hydrochloride in 80 cases of frostbite of the foot in the French army during the winter campaign of 1944. Seventy-five of the cases were mild, while the remaining 5 were considered grave. In the 5 grave and in 15 mild cases the injection was made into the femoral artery. The remaining 60 soldiers were given an intravenous injection of 20 cc. of a 1 per cent solution. Patients who suffered extremely were given another injection the same night and almost all of them slept. Sixty patients were able to walk the second day after admission, and three days later 70 patients returned to the front line. Only 5 patients in addition to the 5 with grave frostbite were evacuated to a base hospital. Both intra-arterial and intravenous injections appeared effective, but the effect of the intravenous injections seemed to be more satisfactory. An intravenous injection proved effective after the failure of an intra-arterial injection. Intravenous procaine hydrochloride was used also in the treatment of hundreds of indolent wounds with torpid cicatrization. Complete cicatrization occurred within twenty days to one month of the start of the treatment. Intravenous injections proved superior to the intracutaneous or subcutaneous infiltration of the area adjacent to the wound. Three daily intravenous injections were made in many cases of tibiotarsal sprain, and the results were as satisfactory as those with local infiltration and there was less pain. Good results were obtained in several cases of dislocation of the shoulder, the elbow and the fingers after reduction was accomplished. Function was restored rapidly. In fractures with slight displacement, e. g. fractures of the tuberosity of the humerus and in fractures of the wrist, the injections were continued daily for ten days. Painless mobilization became possible within twenty-four hours of the first intravenous injection. Union occurred rapidly and without complications. The results from this treatment in arthritis, hydrarthrosis and for pain of gastric ulcer were encouraging.

Praxis, Bern

34:647-666 (Nov. 15) 1945

*Use of Cellophane for Prostheses of Tympanic Membrane. E. P. Steinmann.—p. 647.
Sterility by Functional Alteration of Ovary. P. Dubuis.—p. 653.

Cellophane Prostheses of Tympanic Membrane.—Steinmann has applied cellophane prostheses to about forty tympanic membranes. The artificial tympanic membranes adhere for several weeks, usually without irritation in the middle ear. In only 1 case did a mucopurulent secretion develop, which caused flushing out of the prosthesis. The normal desquamation of the tympanic membrane usually causes the prosthesis to slide backward after a few weeks. In the case of new and particularly traumatic perforations, this period is sufficient to permit their closure. In older perforations, granulations likewise appear at the edge of the defect, but this zone of new growth is highly sensitive and complete closure is usually accomplished only after repeated attachments of artificial tympanic membranes. The improvement in the hearing capacity effected by the cellophane prosthesis is considerable.

Policlinico (Med. Sect.) Rome

52:137-175 (Sept.-Oct.) 1945. **Partial Index**

*Rare Constitutional Abnormality of Blood in Relation to Hereditary Microcytic Anemia. E. Silvestroni and I. Bianco.—p. 137.

Constitutional Microcytic Anemia. — Silvestroni and Bianco examined the blood of 1,000 normal persons living in different zones of Italy. An abnormality consisting of an increased number of the erythrocytes, diminished hemoglobin, microcytosis and increased resistance was found in 88 persons. Morphologic changes in the erythrocytes and hyperhemolysis were sometimes present. The leukocytes and platelets were normal. The skin was pale or subicteric. There was moderate splenomegaly. The abnormality is transmitted according to mendelian law. It is more frequent in Sicily and Sardinia than in other parts of Italy. The authors believe that this form of constitutional microcytic anemia is different from the classic form of hemolytic jaundice since anemia and microcytosis are the predominant features and heredity is an indispensable factor for its development.

Nordisk Medicin, Gothenburg

11:2667-2736 (Sept. 20) 1941

Hospitalstidende

So-Called Primary Sinus Thrombosis, with Report of 2 Cases. J. F. Christensen.—p. 2669.
Results of Transplantation of Ovary to Omentum: After-Examination. K. Østerbye.—p. 2675.
*Examinations of Sternal Marrow in Nephrogenic Anemias. Chresten Faarup and A. Søeborg Ohlsen.—p. 2680.
Blood Regeneration in Pernicious Anemia. Calculation of Standard. Significance of Age. E. Schiødt.—p. 2687.

Medicinsk Revue

Adrenogenital Syndrome and Cushing Syndrome. S. Quist-Hanssen. —p. 2689.
Diaphragmatic Hernia. K. Johanning.—p. 2695.

Hygiea

Case of Incarcerated Diaphragmatic Hernia. S. Neij.—p. 2703.

Examinations of Sternal Marrow in Nephrogenic Anemias.—Faarup and Ohlsen tabulate results of 21 sternal punctures in 19 cases, 12 of chronic glomerulonephritis or nephrosclerosis, 1 of subacute glomerulonephritis, 5 of pyelonephritis and 1 of interstitial nephritis. They conclude that in cases of anemia with renal insufficiency due to chronic glomerulonephritis or nephrosclerosis the anemia depends on a hypoplastic, or in some instances on an aplastic erythropoiesis, which explains the failure of the usual antianemic remedies. In these cases it is essential to counteract the azotemic condition first.

25:449-504 (March 16) 1945. **Partial Index**

*Early Diagnosis in Pulmonary Cancer. H. H. Wandall.—p. 454.

Hospitalstidende

Chronic Pyelonephritis Without Proteinuria. F. Raschous.—p. 457.
Paralytic Myoglobinuria. J. Schwerin.—p. 460.

Hygiea

Cases of Waterhouse-Friderichsen Syndrome in Adults. A. Bergstrand. —p. 461.
Preliminary Studies on Blood Group Factor P. B. Jonsson and V. Fabricius-Hansen.—p. 467.

Svenska Läkaresällskapets Förhandlingar

Advances in War Surgery During Present War. Einar Perman.—p. 472.

Early Diagnosis of Pulmonary Cancer.—Wandall says that histologic verification of the diagnosis of pulmonary cancer by bronchoscopic biopsy can be anticipated in about half of the cases. Puncture of the lung by aspiration biopsy, thoracoscopic biopsy, establishment of tumor cells in the pleural exudate and demonstration of tumor cells in the expectorate are available methods. The last named procedure allows definite establishment of tumor elements in about four fifths of the cases of primary pulmonary cancer. The specimen must be from the bronchi and not be allowed to stand more than eight hours. By application of bronchoscopic biopsy and examination of the expectorate the diagnosis of cancer of the lungs can be verified in about 90 per cent of the cases. Sometimes exploratory thoracotomy will be necessary. All patients over 35-40 should be thoroughly examined if cough, expectoration or lowered general condition continues after pneumonia, influenza or severe febrile colds, if these disorders recur or if there are hemoptysis, attacks of atypical pain in the upper part of the abdomen, thorax, shoulder and arm. The fact that pulmonary cancer can be cured if treatment is given in time and that young persons are often affected calls for bending every effort for thorough examination of these patients as soon as symptoms appear.

Book Notices

A Future for Preventive Medicine. By Edward J. Stieglitz, M.S., M.D., F.A.C.P. Studies of The New York Academy of Medicine Committee on Medicine and the Changing Order. Cloth. Price, $1. Pp. 77, with 7 illustrations. New York: Commonwealth Fund; London: Oxford University Press, 1945.

Seldom does one find the wealth of wisdom, philosophy and factual information within the pages of a single volume. This monograph will challenge the imagination and hold the concentrated attention of the reader from beginning to end. That the problems of the future will not lend themselves with increasing benefits to systems for the mass treatment and control of disease is the strong conviction of the author. The individual cannot be "given" health. He must recognize its value and consciously strive to achieve a high standard through education and knowledge derived from research. Government may make the facilities available, but that in itself is not enough—the interest and will of the individual are highly essential to the success of a health program. Health in its fullest sense is not a right that can be demanded. It must be sought for and deserved through conscious intelligent individual effort. Dr. Stieglitz pulls no punches nor does he mince words. He leaves no doubt as to his attitude toward some of the health and medical problems of the present day. Among others the significance and value of the health inventory is set forth with a clarity and emphasis that is new and refreshing. Not every one will agree with everything that Dr. Stieglitz says, but the provocative statements will cause serious thought and result in wholesome discussion.

The Physician's Business: *Practical and Economic Aspects of Medicine.* By George D. Wolf, M.D., Assistant Clinical Professor of Otolaryngology, New York Medical College, New York. With a foreword by Harold Rypins A.B., M.D., F.A.C.P. Second edition. Fabrikoid. Price, $6. Pp. 433, with 58 illustrations. Philadelphia, London & Montreal: J. B. Lippincott Company, 1945.

This is a revision of the original volume, which first appeared in 1938. Added are chapters on prepayment health (or sickness) insurance and workmen's compensation laws. Both are well done. However, the former is already somewhat out of date because of the rapid changes taking place and recent actions of organized medicine. As the author points out, the chapter on medical careers other than private practice is somewhat obsolete, having been written before the war. This is equally true of portions of the chapters on specialization and on location. It might have been well, therefore, to withhold publication of the second edition until conditions had become more settled. Especially informative and helpful are the chapters dealing with case histories, planning and equipping an office, office personnel, technics and surgical instruments. It is quite evident that the author is much better equipped to write on these subjects than on business procedures. The chapter dealing with financial records is incomplete and could also stand revision. That portion of the chapter on the doctor and his patient relating to financial records might well be combined with that on the income tax. The desirability of some of the procedures outlined in collecting doctors' accounts might also be open to question. On the whole, however, the author has done a thorough job. The title of the book does not by any means indicate its scope. Better is its subtitle, "Practical and Economic Aspects of Medicine."

Recent Advances in Obstetrics and Gynæcology. By Aleck W. Bourne, M.A., M.B., B.Ch., Obstetric Surgeon to St. Mary's Hospital, London, and Leslie H. Williams, M.D., M.S., F.R.C.S., Obstetric Surgeon to Out-Patients, St Mary's Hospital, London. Sixth edition. Fabrikoid. Price, $5.50. Pp. 357, with 77 illustrations. Philadelphia: Blakiston Company, 1945.

This is the sixth edition to appear since 1926. As in previous editions, the authors have selected special subjects in which there have been definite advances in our knowledge. In this edition the topics selected are (1) nutrition in pregnancy and fetal development, (2) vitamin K and hemorrhagic disease of the newborn, (3) anesthesia and analgesia in obstetrics, (4) breech deliveries, (5) erythroblastosis, (6) postnatal care, (7) stillbirth and neonatal death, (8) radiology in obstetrics (by E. Rohan Williams), (9) cancer of the uterus, (10) sterility, (11) leukorrhea, (12) sympathectomy, (13) the sex hormones, (14) ovarian tumors (by Wilfred Shaw), (15) radiologic investigation and diagnosis in gynecology (by E. Rohan Williams) and (16) x-ray therapy in gynecology (by W. M. Levitt). For each subject the authors have carefully read and interpreted the literature. In addition they offer their personal criticism and suggestions. At the end of each chapter is a list of references. It is unfortunate that the authors devoted three of the sixteen chapters, or almost one fifth of the entire book (sixty-two pages) to radiology. They might have devoted some of this space to obstetric uterine hemorrhages, puerperal sepsis and its modern treatment, gynecologic operative technic and pelvic infections, particularly the newer therapy of gonorrhea. In spite of this shortcoming the book should prove useful to practitioners who cannot keep pace with the progress which is made in obstetrics and gynecology by reading original papers. The book is well written and is adequately illustrated. In spite of the critical paper situation and the shortage of skilled printers in England, the publishers have done their part most creditably.

Carbon Monoxide: Its Hazards and the Mechanism of Its Action. By W. F. von Oettingen, Principal Industrial Toxicologist, United States Public Health Service. Federal Security Agency, United States Public Health Service, *Public Health Bulletin No. 290.* From the Industrial Hygiene Research Laboratory, National Institute of Health. Prepared by direction of the Surgeon General. Paper. Price, 35 cents. Pp. 257, with 26 illustrations. Washington, D. C.: Supt. of Doc., Government Printing Office, 1944.

Deaths from carbon monoxide still continue to occur far beyond any reasonable warrant. Some of these deaths are suicidal; others are the results of defects in the mechanism of exhausts in engines of many kinds, particularly exhausts of motor cars. This monograph by a distinguished toxicologist of the U. S. Public Health Service is the most complete work on the subject yet made available, covering completely the sources of exposure to carbon monoxide, its chemistry, methods of determination of its presence, the pathology, the clinical symptoms, the prophylaxis and the treatment. The monograph is supplemented with a bibliography and an author and subject index.

***Manual for Coding Causes of Illness According to a Diagnosis Code for* Tabulating Morbidity Statistics.** Prepared by Direction of the Surgeon General in the Division of Public Health Methods, U. S. Public Health Service, with the Cooperation and Assistance of the Division of Vital Statistics, U. S. Bureau of the Census, the Johns Hopkins Hospital and School of Hygiene and Public Health, and the Mayo Clinic. Federal Security Agency, U. S. Public Health Service, Miscellaneous Publication No. 32. Cloth. Price, $1.25. Pp. 489. Washington, D. C.: Government Printing Office, 1944.

This manual has been devised to facilitate the statistical tabulation and analysis of the causes for morbidity. It does not conflict with any nomenclature of disease and should not be used to classify causes of disease except for statistical purposes. If properly used and modified by experience this manual should serve to promote statistical handling of causes of illness and to bridge the gap between detailed clinical diagnoses and the causes of death as given in the officially adopted International List.

Statistical Methods Applied to Experiments in Agriculture and Biology. By George W. Snedecor, *Director of Statistical Laboratory of Iowa State College, Ames, Iowa.* Fourth edition. Cloth. Price, $1.50. Pp. 485, with illustrations. Ames, Iowa: Collegiate Press, Inc., 1946.

Previous editions of this book on statistical methods have been reviewed in The Journal. The latest edition, coming six years after the third, contains a great deal of valuable information for those who are interested in statistical methodology. The text has been largely rewritten. It is not simple reading for any one who is not thoroughly familiar with mathematics and the science of statistics.

Diary of the Ship's Surgeon: Being the Diary of a Ship's Surgeon on a Voyage to the Orient Just Before Pearl Harbor. By R. G. Ehlers, M.D. Cloth. Price, $1.50. Pp. 182, with 1 portrait. Boston: Meador Publishing Company, 1944.

This little book is the diary of a surgeon serving on a Merchant Marine ship just before the entry of this country into the war. It has little medical significance but furnishes pleasant reading, although throwing a depressing light on certain aspects of our prewar Merchant Marine Service and its personnel.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

SODIUM BALANCE IN EDEMA

To the Editor:—Could you explain to me the mechanism of "tissue retention of sodium" in an edematous patient? In view of the fact that the sodium ion can freely permeate the capillary endothelium, how can the tissues retain enough sodium to promote edema? In other words, why doesn't the sodium enter the capillary instead of the fluid leaving the capillary?

Frank De Trana, M.D., Chicago.

ANSWER.—The capillary wall is freely permeable to sodium in either direction, and edema is not due to a change in this permeability. Therefore the phrase "tissue retention of sodium" must not be taken too literally. It really means an excess of the normal extravascular or interstitial fluid, which is essentially a low protein ultrafiltrate of the plasma containing all the diffusible electrolytes and nonelectrolytes in approximately the same concentration as the plasma, except for the small differences due to the Donnan membrane equilibrium. The chief electrolyte cation in extracellular fluids is sodium; the chief anions are chloride and bicarbonate.

Edema is brought about by a disturbance in the balance of forces favoring filtration and reabsorption respectively. When sodium, as sodium chloride, is ingested it is absorbed as an isotonic solution, increases the plasma volume and is filtered by the capillary blood pressure into the interstitial spaces. If the sum of factors in the reabsorption of tissue fluids (plasma protein osmotic pressure, tissue pressure and lymphatic drainage) is less potent than the sum of factors in filtration (capillary blood pressure, amount of protein in interstitial fluid, local tissue metabolism), an excess of saline solution will remain in the tissue spaces. If, on the other hand, sodium is restricted in the diet or its normal absorption from the lumen of the renal tubule is diminished by the action of diuretic drugs, urinary loss of sodium (and chloride and water) soon reverses the stream and more interstitial fluid moves back into vascular channels until a new equilibrium is established. If sodium chloride could be given in large amounts with little water so as to render the body fluids high in salt concentration, diuresis would undoubtedly result even in an edematous patient. In other words, the tissues in edema do not retain sodium but simply contain an excess of interstitial fluid with their normal sodium concentration. Some tissues, like bone and certain types of collagen, contain sodium in "bound" form, not freely exchanging with the sodium of interstitial fluid although participating in the uptake of radioactive sodium.

The exchange of muscle cell potassium for sodium which is seen after severe trauma, burns, severe dehydration with loss of muscle cell water and its contained potassium or after excessive administration of desoxycorticosterone in animals (and probably in man) is not a true tissue retention of sodium and is not to be identified with edema in the ordinary sense, since the water content of the affected muscle cell is not increased. On the other hand, the decreased excretion of sodium which is the result of desoxycorticosterone effect on the renal tubular reabsorption reflects itself in an increased plasma volume, increased blood pressure and ultimately increased filtration of plasma water and its contained electrolytes into interstitial spaces, producing edema.

On the whole, therefore, the concept of the permeability of the capillary wall is best omitted in the consideration of ordinary cardiac or renal edema, since changes in permeability to electrolytes and water do not play a significant role in this type of edema.

CARBON 13

To the Editor:—I have recently received a letter from France stating that "the newspapers of France have published articles on Carbon 13 which should be a sensational American discovery in the fight against cancer." Can you give any information concerning this subject?

Campbell Howard, M.D., New York.

ANSWER.—Carbon 13 is an isotope of "normal" carbon 12, from which it differs by having an extra neutron in its nucleus. It is stable and not radioactive. It has not been found useful in the treatment of any disease. However, it has been useful in studies of metabolism. Carbon 13 has chemical properties identical with carbon 12 but weighs more. Hence compounds may be marked or "labeled" by the presence of carbon 13. This permits the tracing of the intermediate stages of metabolism which compounds undergo after ingestion. A wide field of investigation is thus opened by the use of carbon 13 for the solution of many metabolic problems. The study of intracellular metabolism is extremely important in cancer research. Although at the present time physical instruments for measuring isotopes are not sensitive enough to enter individual cells, carbon 13 can be used for studies of tissue metabolism.

The quantity of carbon 13 was minimal until the recent erection of a thermal diffusion plant by the Houdry Process Corporation, Marcus Hook, Pa. The Sun Oil Company has recently begun construction of a large plant for the same purpose.

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Medes, Grace; Weinhouse, Sidney, and Floyd, N. F.: Ketone Body Formation from Acetate in Kidney, with Isotopic Carbon as a Tracer, *ibid.* **157**: 751 (Feb.) 1945.

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SENSITIVITY TO SULFADIAZINE OR FISH POISONING

To the Editor:—A man aged 60 with calculosis of the left kidney accompanied by a mild form of pyelitis became ill with fever, conjunctivitis and stomatitis in the form of many patches on the tongue, palate and cheeks two hours after taking one single tablet (0.5 Gm.) of sulfadiazine while eating a dish of fish in a restaurant. It does not seem justified to accuse such a small dose of sulfadiazine unless there exists something like a hypersensitivity. Some months ago the man had been using the same drug in moderate doses. I should like to know if such a sequence of events has been observed elsewhere. Otherwise in this case the meal of fish ought to be accused.

F. Hinrichsen, M.D., Rio de Janeiro.

ANSWER.—Fever, conjunctivitis and stomatitis are manifestations of sensitivity to sulfadiazine. A person may take sulfadiazine or any other sulfonamide without any untoward reaction; then, after an interval of some time, evidence of sensitivity to a sulfonamide may appear following an initial dose of a small amount of a given sulfonamide. However, in the case under discussion one cannot rule out the possibility of fish causing sensitization. It is assumed that the patient has eaten fish in the past without displaying evidence of sensitivity. If this is true, then sensitization to sulfadiazine should be seriously considered. Tests for eliciting sulfonamide sensitivity are unsatisfactory. If there is any doubt about a patient being sensitive to the drug he should be given a single tablet and then observed for six to eight hours. Usually within this time he will display signs of sensitivity such as nausea, vomiting, fever, chilly sensations and at times a dermatitis.

SERUM PHOSPHORUS IN HYPERPARATHYROIDISM

To the Editor:—Is there any explanation why the serum phosphorus is low in hyperparathyroidism? Why do so many diet experts recommend the use of beef in diet lists and do not allow veal though veal is more tender?

Anthony Pirrone, M.D., Cleveland.

ANSWER.—The changes in calcium and phosphorus metabolism characteristic of hyperparathyroidism are increased serum calcium, increased calcium and phosphorus excretion and decreased serum phosphorus.

Jaffe suggested that the parathyroid hormone in some way mobilizes the insoluble calcium salts of the bone and thereby raises the serum calcium level. Since calcium and phosphate ions form a slightly soluble salt, the increased serum calcium would drive the phosphate ions from the serum into the bone and thereby lower the concentration of the phosphorus in the serum. This hypothesis is supported by the work of several recent investigators quoted by Pope and Aub, who found indications that the parathyroid hormone acts primarily to mobilize calcium from the bone.

On the other hand, Albright and Ellsworth suggested that the primary action of the parathyroid hormone is to increase renal excretion of phosphorus. This is supported by the Harrisons, who showed that parathyroid hormone decreases renal tubular reabsorption of the phosphate ion. This results in a low serum phosphorus, which allows withdrawal of calcium from the bone to raise the serum calcium level. The increased serum calcium level then leads to increased urinary excretion of calcium.

These two hypotheses may eventually be reconciled. It is probable that both mobilization of calcium from the bone and increased renal excretion of phosphate ion are effected by the direct action of parathyroid hormone.

The omission of veal from diet lists must be presumed to be without significance, since there is no essential difference in the relative nutritive value of beef and veal. A comparison of their relative composition, such as that given in a recent publication of the Department of Agriculture, shows that they are practically identical, the only difference being a slightly greater concentration of niacin and riboflavin in veal than in beef.

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Pope, Alfred, and Aub, J. C.: The Parathyroid Glands and Parathormone, *New England J. Med.* **230:** 698 (June 8) 1944.

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EMPYEMA AND PENICILLIN THERAPY

To the Editor:—Is it possible that, following treatment of a bacterial empyema with penicillin administered intrapleurally, the micro-organisms are completely eliminated and the inflammation persists for a considerable length of time? In other words, is persistence of exudate, even when bacteriologically sterile, evidence of bacterial infection not elucidated?

M.D., New York.

ANSWER.—Bacteria may disappear rapidly or dead bacteria may be demonstrable in the pus after penicillin is injected into the pleural cavity during empyema, but some time is required for the resorption of pus. Therefore the persistence of exudate does not necessarily indicate continued bacterial infection or inflammation. However, sterile pus acting as foreign protein material may cause a degree of inflammation. The matter was discussed by Poppe in THE JOURNAL, Oct. 6, 1945, page 435. He recommends a week's observation after discontinuing penicillin to determine whether residual infection still remains. Relapses occurred in half of his patients. Surgical drainage is necessary when turbid pleural effusion persists after a pyogenic infection has been adequately treated with penicillin.

EFFECT OF ACETYLSALICYLIC ACID ON LEUKOCYTE COUNTS

To the Editor:—Does aspirin have any effect on the white blood cell count and, if so, what effect? Further, if aspirin does affect the white blood cell count, would 10 or 15 grains of aspirin daily have such effect?

J. D. Riley, M.D., Booneville, Ark.

ANSWER.—There is no evidence that aspirin (acetylsalicylic acid) has any effect on the white blood cell count. Since aspirin is a benzene ring preparation, it might justifiably be included in the list of drugs that are known to produce reduction of white cells, but it is probable that the side chains on the benzene ring make it nontoxic. There have been rare reports in which aspirin is believed to have caused thrombocytopenia or hypothrombinemia resulting in a hemorrhagic syndrome. These are probably instances of idiosyncrasy to the drug.

SOLUTIONS TO USE IN THE NOSE

To the Editor:—I have been using mild protein silver packs in the nasal cavity to promote profuse discharge. Some patients object to this, stating that it causes irritation. Can you supply me with one or more prescriptions that I may use for this purpose? M.D., Washington.

ANSWER.—Before answering the question it may well be asked to what purpose one would wish to use a preparation for the sole purpose of promoting a profuse discharge. The latter may mean no more than a response to undue irritation.

Investigations in the past few years have been devoted to the idea of using preparations in the nose compatible with the proper physiologic functioning of the nasal mucosa.

Such solutions as recommended by N. D. Fabricant (Nasal Medication, Baltimore, Williams and Wilkins, 1942) and others, whether used in packs, sprays or as drops, should have a moderate decongestant effect and may contain biotics such as microform sulfathiazole crystals, tyrothricin or penicillin but should not vary greatly in their p_H (5.5 to 6.5) from that of normal nasal secretions, nor should they be harmful to ciliary action. They should not injure the nasal mucosa and should be isotonic with the blood. They should not cause undue secondary side reactions, such as increased nasal congestion, watery secretion or sneezing. Preparations too that cause the blood pressure to rise unduly should be avoided. A number of good preparations are on the market and contain either the salts of ephedrine or those of closely allied synthetically prepared substances.

CHEYNE-STOKES RESPIRATION

To the Editor:—I have Cheyne-Stokes respiration, beginning about eight months ago. I have mild bronchiectasis, perhaps better termed chronic bronchitis. My age is 70; my blood pressure is 70/120; my heart had always been good until this began, doubtless from overwork with the ever present flu, which has been disturbing heart and musculature. I have been using aminophyline. How about histamine—what is the suggested dosage? I am better lying down with two pillows, though I drive my car and walk about without any thought of weakness unless too long continued.

M.D., California.

ANSWER.—Cheyne-Stokes respiration, a waxing and waning type of breathing in which the respiration is at first slow and shallow, then gradually builds up to a maximum in depth and rate only to subside again and finally cease for a short time, is occasionally found in normal adults during sleep. The most common clinical conditions in which it is found are advanced renal and heart disease, asthma and increased intracranial pressure. The pressure of orthopnea in this case (as judged by the need of two pillows when lying down) suggests the pressure of cardiac insufficiency.

Since therapy is decided by the chief cause of the Cheyne-Stokes respiration, a careful evaluation of the cardiac and renal status is indicated. Treatment directed toward an abnormality of the cardiorenal systems probably will have a secondary beneficial effect on the respiration. Histamine has a definite tendency to produce a fall in blood pressure and thus is not indicated for treatment of Cheyne-Stokes respiration. Occasional rebreathing, or the use of a 7 per cent mixture of carbon dioxide in oxygen, may help to stabilize the respiratory rhythm.

INSOMNIA AND HYPERHIDROSIS IN CIRCULATORY DISORDERS

To the Editor:—A man, aged 67 has had a hypertension for the last twelve years or more but, until December 1944, never had any confining sickness. At that time, though, he suffered an attack of angina and was in the hospital for a week. About a month later he had an attack of complete suppression of urine, relieved only by catheterization. On Feb. 1, 1945 a transurethral prostatectomy was performed with uneventful recovery. His work consists entirely of office work, not requiring any physical effort more than driving an automobile to the office and back. On Oct. 5, 1945 the patient had what was obviously an attack of angina with coronary occlusion, accompanied by shortness of breath, and has been confined to bed since that time for complete rest. Each morning at about 6 o'clock he wakes up and becomes drenched in a cold, clammy perspiration. The appetite is poor. The only medication taken is digitoxin, and because of insomnia he takes from 0.1 to 0.2 Gm. pentobarbital sodium. Could you suggest something to stop this hyperhidrosis as it is the most disagreeable part of the illness. M.D., West Virginia.

ANSWER.—The early morning perspiration described suggests a reaction to some circulatory disorder. One of the causes of insomnia and of early awakening is pulmonary congestion and that, when moderately acute, can give rise to perspiration. It would be wise, therefore, to look for pulmonary congestion and to treat it if found by diuretic therapy and perhaps low salt intake as well as by digitalis. The poor appetite may be due either to congestion or to the effect of digitalis. There is no information on the production of perspiration by pentobarbital sodium or by digitalis. Now and then insomnia may be relieved in persons who have left ventricular strain and failure, not by hypnotics, but by diuretics.

OPERATIONS ON CLITORIS FOR FRIGIDITY

To the Editor:—While I agree with the reply to Dr. Frank E. Hyde's question about operations on the clitoris for frigidity or reduced libido as far as the effect of such operations is concerned (with the exception that the glans clitoris should be exposed if it is entirely covered by a prepuce), I take definite exception to the statement from Greenhill. This no doubt comes from "Frigidity in Women," by Hitschmann and Bergler (Washington and New York, Nervous and Mental Disease Publishing Company, 1936). Thousands of women who are normal in every way sexually and have one or more orgasms spontaneously in each act of intercourse will testify that the clitoris is the principal erogenous zone. Havelock Ellis made clear the relative insensibility of the vagina. In my opinion there is no such thing as a "vaginal orgasm," for there are no genital corpuscles in that organ. In both sexes they are found only in the head of the phallic organ. Only through these specialized nerve endings (cerebrally or locally stimulated) can the orgasm be initiated and felt.

G. Lombard Kelly, M.D., Augusta, Ga.

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ANESTHESIOLOGY IN THE HOSPITAL AND IN THE MEDICAL SCHOOL

RALPH M. WATERS, M.D.
Professor of Anesthesiology, University of Wisconsin Medical School
Madison, Wis.

Two circumstances have been blamed for the delay or reluctance in accepting to the fullest the service which modern anesthesia might render. One is the lack of a sufficient number and quality of physicians prepared to accept the responsibility. The other, sometimes suggested as a cause for the first, is the existence of widespread abuses, exploitation and all round lack of appreciation of those who are devoting their energies to the specialty. The present would seem to be an auspicious time to reconsider the subject and to discuss how anesthesiology can best serve the needs of the medical student, the surgical profession, the hospital and, most important of all, our patients. During the war many surgeons for the first time observed the advantages of medical training as the foundation for an anesthetist. At the same time the number of physicians who realize the importance and attractiveness of anesthesiology as a major interest has been increased by several hundred per cent. We are now at a crossroad. Either we must take advantage of this new realization of the importance of anesthesia and of the interest and enthusiasm of returning "military anesthetists" or we shall continue the former abuses, neglect and exploitation of anesthesia and anesthetists. In the first instance patients will receive in the long future the best service in anesthesiology which current knowledge makes it possible to give them. In the second, that service will retrogress to a new low of neglect.

In order to establish a reasonable view of the problem we must disabuse ourselves of a generally held belief that the importance of anesthesiology lies in the "choice of agents" or in the particular "technic" employed. All drugs and the methods by which they are administered are subject to abuse. Through fundamental knowledge and diagnostic skill the abuses are avoided or neutralized, quite as much as by artful technical manipulations. The unimportance of the chosen drug is shown by the accompanying illustrations. An outline of experiments comparing some effects of vinyl ether, trichlorethylene and chloroform appears in table 1. It is evident that chloroform, an old but now almost discarded drug, does not come off second best when compared with two new agents which have been accepted with considerable enthusiasm. A statistical evaluation of results following the administration of common agents at Wisconsin General Hospital is presented in tables 2 and 3, the former showing the incidence of major pulmonary complications and the latter of "hospital" deaths occurring in the daily work of the institution. It will be noted that the variation in results is not wide following the use of the several agents. If time for discussion permitted, it could be shown that such variations as do exist are better explained by the preoperative condition of patients, the nature of operations and the lack of training and the inexperience of anesthetists rather than by correlation with the drug chosen or the method of its administration. For instance, both death rate and pulmonary morbidity were high among patients credited to nitrous oxide and "other" inhalation agents. However, nitrous oxide, combined with high percentages of oxygen, was often used in cases in which the physical condition was desperate or the need for oxygen administration acute. Likewise the addition of "other" agents was often in the presence of incurable disease in order to study the effects of drugs with which we were less familiar.

It's not the tools but the way the tools are used. The future of anesthesiology, as I see it, is not dependent on the discovery of new drugs but may be boiled down to two efforts: (1) elimination of certain abuses which are common and accepted practices in our country and (2) the establishment of an understanding by schools, the profession and the public of what anesthesiology really implies in the hospital and in the medical school.

ABUSES

To enter into a detailed and comprehensive discussion of the abuses of anesthesia, of the anesthetist and by the anesthetist is not the present purpose. Doubtless a complete survey of the whole country ought to be made in order to call to our attention the various and sundry sins of omission and commission which we are permitting to continue, largely without realizing their harmful effects on the service which our patients receive. A brief enumeration of a few of these abuses will illustrate what is meant. The following quotations extracted from resolutions adopted by the Board of Trustees of the American Medical Association, after they had been accepted by the American Hospital Association and other national bodies, state the ideals of organized medicine:[1]

> A qualified medical specialist in anesthesia is entitled to recognition as a professional member of the medical staff and as head of a hospital department. . . .
>
> Neither the hospital nor the anesthetist should exploit the patient or each other.

and yet widespread disregard of these precepts is common. A well organized and adequately staffed department of anesthesia is the exception rather than the rule in our hospitals. The administration of such departments as do exist is too often dominated by hospital executives or others whose vision of the ideal is blurred by a desire to avoid entries on the debit side of the ledger. The employer of a physician well trained in anesthesiology, on a restricted salary and with an inadequate number and quality of assistants, exploits that physician. If the employer collects as anesthetic fees from patients more than is spent to provide service in anesthesia, the public is exploited. No less blameworthy is the physician who, although a competent anesthesiologist, hires inexperienced, untrained physicians or technicians at inadequate salaries so that he may appear to serve more private patients—and collect more fees.

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[1] Anesthesia Service in Hospitals, J. A. M. A. **114**:1260 (March 30) 1940.

TABLE 1.—*Effects of Anesthetic Agents on Dogs* *

	Hepatic	Renal	Cardiac
Divinyl ether (vinethene)	Central zonal necrosis to acute yellow atrophy	Definite impairment; urea clearances 10%; to anuria	None
Trichlorethylene (trilene)	Minimal hydropic to fatty degeneration	No definite impairment	Severe (ventricular tachycardia)
Chloroform	None to minimal hydropic degeneration	No alteration of function	Moderate (ventricular tachycardia rare)

* The three agents were administered to dogs by the carbon dioxide absorption to and fro technic, particular attention being paid to adequate oxygen tension in the respired atmosphere and to adequate ventilation of the lungs. Administrations, one hour in duration once a week, were repeated to produce structural as well as functional hepatic and renal damage if possible. The general picture rather favors chloroform in the comparison.

The patient's "fear of an anesthetic" is proverbial. Perhaps the contempt bred of familiarity which dominates the attitude of those of us who work in operating rooms is more illogical than the patient's fear. The needs of many modern surgical operations demand that the patient be carried much nearer to a fatal dose of drugs than does any other branch of therapeutics. Cases are not rare when diagnostic acumen and swift change in the plan of management are matters of "life and death." But care of the patient during operation is only one of many services to patients, surgeons and hospitals which may be considered a part of anesthesiology. The public wants the best service obtainable and for that it has always been willing to pay. If present abuses and injustices can be eliminated, even now patients pay enough to secure much pleasanter and safer service than they are getting. The best would be willingly purchased. What we need for the future is to determine how best to organize the service of anesthesiology in the hospital and in the medical school.

COSTS

In line with practice common in the other surgical specialties, the professional anesthetist has, in the long past, collected his income directly from his patients. Since the fees of the surgeon were very large in comparison with those of the anesthetist, the latter found it necessary to administer many more anesthetics than the surgeon had to perform operations in order to acquire a satisfactory income. Under these circumstances every minute of his working hours has to be arranged very carefully if his many small fees are to equal one or two of those received by the surgeon. The burden of "free" cases and extremely long operations may fall with considerable injustice on the anesthesiologist. With increasing duties outside the operating room which the practice of anesthesiology now implies, various plans are being tried for equitable distribution of the funds collected. Full time and part time salaries, percentages based on the work done and skill required, or these combined with private fees are some of the methods in use. Probably no one plan will be found best for all institutions. The important thing is to avoid "exploitation," to be sure that sufficient funds are set aside or collected to pay adequately for good service in anesthesiology and then to guarantee that such funds be used to provide such service and for no other purpose.

ORGANIZATION

The accompanying diagram is an outline of service in anesthesiology which may be split apart to apply to various types of institutions. The word "salaries" in the figure had better be read "remuneration" since, where private cases predominate, the fees collected directly may constitute the whole or a part of the source of income. In any case the organization of a real "department of anesthesiology" is desirable in order to provide unity of effort and efficient twenty-four hour service in whatever meaning the word is taken to imply in a given hospital. Whether intravenous therapy, inhalation therapy, block anesthesia for diagnosis and therapeutic purposes, the care of acute pulmonary difficulties or other services are included is a matter for decision by each hospital staff. Responsibilities will be assumed as individual skills and interests develop.

The diagram includes both hospital and medical school relations because organizations in a majority of our medical schools are as yet in the gestation period. Certain mistakes have been made in starting new departments. The most common, in hospitals as well as in the university hospital-medical school setup, is the misconception that a single experienced and capable individual can constitute a department of anesthesiology and can care for the multifarious duties in even a small hospital. The diagram at the upper left emphasizes the fact that service, even in the operating room, requires at least one competent supervisor for each three operating teams if safe practice is to be maintained.

TABLE 2.—*Major Respiratory Complications* *

Agent	Number of Cases	Incidence	
		Cases	Per Cent
Cyclopropane	10,607	229	2.16
Ether	5,203	143	2.74
	2,114	76	3.59
	624	31	4.96
Intravenous barbiturate	1,398	16	1.14
Regional agents	3,017	79	2.61
Others	263	4	1.52
Total	23,226	621	2.67

* This table indicates that the percentage of major respiratory complications does not vary widely. The physical state of the patients receiving nitrous oxide and "other agents" is believed to explain the higher percentage with these agents rather than effects of the drugs.

In institutions where the geographic spread of operating rooms is wide or where the incidence of serious operations is great, maximum safety may demand an experienced and competent anesthetist for each operating team. A single person may of necessity be asked to initiate the organization of a department. However, unless sufficiently competent associates can be added shortly, the individual's health will suffer and the service will fail. One individual cannot be in several places at one time. A "department" implies sufficient personnel, not a single individual trying to teach a large group of neophytes or to supervise a similar number of technicians.

TEACHING

Modern hospitals are medical teaching centers, good or bad, whether they wish it or not. If we in medical schools who have contact with undergraduate medical students did our full duty, interns and residents would come to the hospital well founded in the basic knowledge necessary for clinical teaching of anesthesiology. Since we still fall short of that goal, a brief intensive course to cover the basic need is contemplated in some schools, as is indicated at the lower right of the diagram. Such courses, given in medical schools, may be combined with residencies in hospitals where clinical material, clinical teaching and capable supervision are available but a faculty-team in a medical school is not possible. Experience has taught that, however excellent the instruction in anatomy, physiology, pharmacology and biochemistry in the regular curriculum, these matters need to be reconsidered and emphasized in the light of clinical experience in anesthesiology. Results of such short graduate courses for medical officers during the war support the belief that they may prove very valuable if suitable curriculum and teachers can be arranged.

TABLE 3.—*Deaths in the Operative and Postoperative Periods* *

Agent	Number of Cases	Deaths	
		Cases	Per Cent
Cyclopropane	10,607	225	2.12
Ether	5,203	123	2.36
Nitrous oxide	2,114	102	4.8
Other inhalation	624	27	4.33
Intravenous barbiturate	1,398	24	1.7
Regional agents	3,017	108	3.57
Others	263	12	4.56
Total	23,226	621	2.67

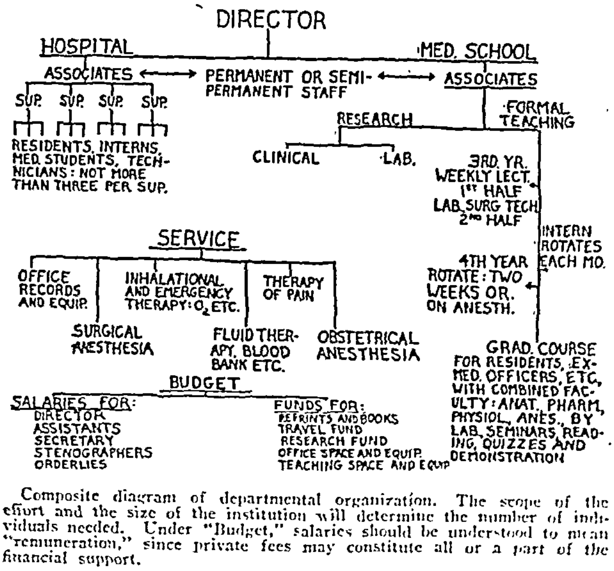
* Comparable to table 2, the higher death rate following nitrous oxide and "other agents" is believed to be due to the preoperative condition of the patients.

No less important than graduate teaching is that to which the medical student is exposed. Both must be conducted from the point of view of the hospital, not the laboratory. The sixteen lecture-demonstration-discussion periods shown in the diagram as required of third year students prove to be a minimum of time in which to reinterpret and apply the undergraduate's previous knowledge of basic science to the problems which he must solve in the hospital. On graduation he ought to have sufficient knowledge of anesthesia to distinguish the good from the bad, and in addition every physician must have a clear concept of the physical as well as the physiologic factors of the respiratory and circulatory systems. Since care of sudden changes in these factors is the hourly concern of the anesthesiologist, he has been considered the teacher most likely to equip the medical student to deal with the emergencies he will later encounter. All this, in my estimation, is essential to the education of a medical practitioner whatever his plans for the future may be.

Research is often looked on as the chief end to be attained by a director or a department. To my mind it ranks third in the objects sought. Service to patients, teaching and lastly research is the order of importance as I see it. In the diagram, research is under the medical school. However, just as with teaching, I believe that research should be a cooperative effort between the faculty of medicine and the hospital staff. If new drugs are to be investigated or old ones studied, the laboratory first, then the operating room should be the order of attack. It is important for the anesthesiologist to be familiar with laboratory customs, language and literature. It is no less important for certain workers in the laboratory to become familiar with the problems of the operating room and the ward. Much wasted effort in unnecessary experimentation can be avoided by interdepartmental friendship and understanding throughout the medical school and hospital.

RELATIONS WITH THE SURGICAL DEPARTMENT

The primary duty of anesthesiology is service in the operating room to the surgeon and to his patients. At the same time every department of the hospital can benefit by the help of the anesthesiologist on certain occasions. Should the department be a subdivision of the department of surgery or should it be a separate entity? In the diagram it is shown in the latter relation because experience has demonstrated that this is the more satisfactory to all concerned. Such independence, however, implies an exceptionally sympathetic attitude toward surgery. Those who take part in a surgical operation should form a "team" in the best sense of the word. The attitude of the anesthesiologist in that team must be one of the utmost cooperation—cooperation even to the point of subservience when subservience is necessary for the best accomplishment of the team. But never subservience beyond that point. The anesthesiologist is the colleague of the surgeon. The patient is best served by their mutual friendship and joint discussion of the problems involved in his care. Young anesthetists and surgeons must be warned against acquiring a critical attitude toward each other.


DIRECTOR
HOSPITAL
MED. SCHOOL
ASSOCIATES
PERMANENT OR SEMI-PERMANENT STAFF
ASSOCIATES
SUP.
SUP.
SUP.
SUP.
RESIDENTS, INTERNS, MED. STUDENTS, TECHNICIANS: NOT MORE THAN THREE PER SUP.
RESEARCH
FORMAL TEACHING
CLINICAL
LAB.
3RD YR. WEEKLY LECT. 1ST HALF LAB. SURG TECH 2ND HALF
INTERN ROTATES EACH MO.
4TH YEAR ROTATE: TWO WEEKS OR. ON ANESTH.
SERVICE
OFFICE RECORDS AND EQUIP.
INHALATIONAL AND EMERGENCY THERAPY: O2 ETC.
THERAPY OF PAIN
SURGICAL ANESTHESIA
FLUID THERAPY, BLOOD BANK ETC.
OBSTETRICAL ANESTHESIA
GRAD. COURSE FOR RESIDENTS, EX-MED. OFFICERS, ETC, WITH COMBINED FACULTY: ANAT., PHARM., PHYSIOL., ANES., BY LAB. SEMINARS, READING, QUIZZES AND DEMONSTRATION
BUDGET
SALARIES FOR:
DIRECTOR
ASSISTANTS
SECRETARY
STENOGRAPHERS
ORDERLIES
FUNDS FOR:
REPRINTS AND BOOKS
TRAVEL FUND
RESEARCH FUND
OFFICE SPACE AND EQUIP.
TEACHING SPACE AND EQUIP.

Composite diagram of departmental organization. The scope of the effort and the size of the institution will determine the number of individuals needed. Under "Budget," salaries should be understood to mean "remuneration," since private fees may constitute all or a part of the financial support.

There is ample opportunity for the display of the talents of the anesthetist in anesthesiology and of the surgeon in surgery. The attitude of each toward the other can benefit by previous experience in the general practice of medicine. The precepts exemplified in the golden rule should govern their personal relations. In too many of our hospitals anesthesiology suffers because of domination by the department of surgery or by the administrative office of the hospital. Patients will receive the best service in a hospital where the personnel deserves and receives the respect of the whole institution.

TECHNICAL ASSISTANTS IN ANESTHESIOLOGY

Habit determines the routine of our daily lives. Once we are accustomed to doing a thing in a certain way, that becomes and remains the right way unless we devote some real thought to the matter in reconsideration. Some assistance for the woman in labor was found necessary in very early times. Women and the medical profession accepted the midwife as the usual assistant at parturition. The physician was called in only after the customary practice had failed. It was but little over a century ago that Dr. Gregory was fined a hundred pounds sterling in the courts of Edinburgh, Scotland, because of a public caning which he had administered to Dr. Hamilton. Gregory was then professor of physic, or what we call internal medicine, at the University of Edinburgh, and Hamilton was the predecessor of Sir J. Y. Simpson in the chair of midwifery. After paying the fine, Gregory is said to have remarked that he would gladly repeat the experience since he could not abide the pretentions of the nonentity who represented on their faculty the despised art of midwifery. The midwife custom prevailed at that time. Anesthesia came to us one hundred years ago. Compared with obstetrics it is in its infancy. Perhaps it is not strange that in many communities it has become a custom in our country to hold nurses responsible as technicians in anesthesia. Is this right or is it wrong? If we employ nurses or other nonmedical persons as technicians only, as assistants in the care and preparation of equipment, in supervising depressed patients, and in various other ways where diagnostic and therapeutic decisions are not involved, their services can be valuable. On the other hand it is unfortunate, and I believe definitely wrong, when doctors—whether surgeons or anesthesiologists—find it necessary to serve as a figurehead in assuming responsibility for the acts of technicians which involve decisions of a medical nature, decisions in which they take no part. A modern surgeon's duties require all of his attention during operations. Few anesthesiologists can be expected to maintain intelligent contact with more than 2 or 3 cases at one time. If we saddle nurses with the responsibility of anesthesiology and collect from our patients what amounts to professional fees for their services, pocketing the surplus or allowing them to do so, it constitutes exploitation of the public. If we attempt to teach nurses the science and art of anesthesia, that is also wrong because it exploits the medical students who wish to learn anesthesiology while in school and may wish to practice it after graduation. The student will not take kindly to the sort of instruction which can be superimposed on the preliminary training of a nurse, nor will he look with favor on a specialty which is in competition with those who are not medically trained. The argument is offered that an experienced technician often administers anesthetic drugs better than a physician. Individual comparisons may support such a contention. But similar individual comparisons may be made regarding the performance of minor surgical operations. A demonstration was made in earlier times regarding obstetrics. And yet we now approve of 20 to 30 per cent of the medical student's time, in his last two years, being devoted to instruction in obstetrics and gynecology. Midwives are rare. Rightly, nurses are given a course in obstetric nursing just as they ought to be in anesthetic nursing, but attempts to make anesthesiologists of people without a medical background will delay or prevent the future service which ought to be expected from anesthesiology. New drugs, new technics, the study of older ones, teaching and organization, all must depend on the competence of interested and enthusiastic physicians. Unless they are to be allowed to put in practice their discoveries, unless their specialty receives recognition and respect when it deserves it, interest and enthusiasm will fail. Capable brains will look elsewhere for employment.

SUMMARY

The public as a whole is not receiving the best service that anesthesiology is capable of supplying. A reason often cited is that anesthesiologists are not available in sufficient quality or number. This deficiency is due to a variety of abuses which have become common practice in the hospitals of this country. A custom, once established, is accepted indefinitely unless its effects are analyzed periodically. The present seems an auspicious time for us to devote some intensive consideration to existing abuses of and by anesthesiology with a view to improving the care of patients. Proper education of undergraduate and graduate students in our medical schools and hospitals is one method leading to improvement. Another is through the organization of departments of anesthesiology in medical schools and hospitals.

There is danger of the "vicious circle" type of influence on progress. To force nurses to assume the practice of anesthesiology interferes with proper teaching of medical students and young doctors. These in turn begin practice with inadequate knowledge of anesthesiology. As "authorities" in the profession, they later will accept inadequate service as satisfactory and withhold economic and professional recognition of anesthesiologists. Young doctors will hesitate to come to an unrecognized specialty. With fewer physicians, more anesthetic nurses will be required. The ultimate result might become a technical nonscientific service in anesthesia with no one in the medical profession competent to criticize it.

Abuses and undesirable customs of practice have crept upon us. In many instances this has occurred without those who are responsible being aware of the far reaching effects. The imminent return of many hundred medical officers whose interest in anesthesiology has been stimulated by the exigencies of military service creates an auspicious time to correct our mistakes.

Material and Immaterial Values of Science.—There are certain values of science which stand half way between the crudely material values on the one hand and the immaterial values on the other. Knowledge of the facts of equal inheritance from both parents (apart from the genes borne on the sex chromosomes) is important in framing people's general social outlook, but it does not directly provide them with food, health or shelter. The relative status of man and woman would be different from what it is if people believed that inheritance were wholly maternal (as the Trobriand islanders, for instance, are said to believe) or wholly paternal (as some biologists once thought). Again, people's social outlook is affected by their beliefs on the scientific question whether what are popularly called "acquired characters" are inherited. The function of science in reducing superstition comes into this category of values.—Baker, John R.: Science and the Planned State, New York, Macmillan Company, 1945.

"EARLY" CALCIUM UROLITHIASIS

R. H. FLOCKS, M.D.
Associate Professor, Department of Urology, University Hospitals
Iowa City

It has been shown that conditions in which immobilization of the individual is present, in which portions of the urinary tract are paralyzed and in which obstructions and infections of the urinary tract occur, or in which pronounced dehydration is present are likely to lead to calcium urolithiasis. Since the incidence of these conditions has risen decidedly as the result of the war, the importance of this phase of calcium urolithiasis has correspondingly increased, and I believe at the present time this is probably the most common type of urolithiasis.[1]

The probable mechanisms involved in the formation of the stone in these situations is discussed in a previous article. They involved essentially three factors: infection, stasis and hypercalcinuria. The outstanding fact in the vast majority of such cases is the presence of multiple small precipitates of calcium phosphate in the calices and pelvis of the kidney. These may form within eighteen days after the onset of the predisposing factors and grossly resemble the situation with sulfadiazine and sulfathiazole precipitates. These small stones may all pass, they may fuse to form one or more larger stones; they may act as the nucleus for larger stones; and they may be "silent" over long periods of time, at the same time causing very considerable and, at times, irreparable damage to the urinary tract before symptoms occur. This situation in the first six to eight months after the onset of the predisposing conditions before the stones have become intimately mixed with organic material and definitely solidified may be called "early" calcium urolithiasis. There are two outstanding characteristics of this phase of the condition: First it may be "silent" —produce no clinical manifestations—and, therefore, repeated x-ray examinations may be necessary to recognize it.[2] Second, the peculiar character of the stones formed under these conditions is such that special types of treatment are necessary if the best results are to be obtained.

It is my purpose in this paper to describe the clinical, pathologic and roentgenologic characteristics of these stones—so-called "early" calcium urolithiasis—and follow this with a discussion of the treatment of patients with this condition.

The outstanding fact of the early symptomatology of calcium phosphate renal lithiasis is that there are no symptoms. In other words, precipitation of the crystalloids and the formation of the stone take place gradually, with varying rapidity, under the influence of the predisposing factors, with no symptomatology, so that in many of these cases the diagnosis is first made by means of an x-ray film (table 1). After a varying interval symptoms occur in one or more of the following ways: (1) Irritation by small stones may produce hematuria, (2) the passage of a small stone down the ureter may produce ureteral colic, (3) infection may occur as the result of the obstruction caused by the stones. As a result of this there may be pyuria alone or with the generalized symptoms of infection: i. e. chills, fever, leukocytosis and pain over one or both renal regions.

The case illustrated in figure 1 gives the characteristics when infection is not present and no renal damage has as yet occurred. Note that the kidney and pelvic outlines are normal, there is only a slight hematuria and one attack of colic occurred four months after the onset of predisposing conditions. Note the presence of stones in each of the three major calices fitting about the pyramids. Note the excellent response to an acid ash diet and increased movement and urinary output. Such an early case remains in the "early phase" (i. e. nonhardened or consolidated stage) for many many months and therefore is amenable to irrigation therapy for a long time. This type of stone is ideal for dissolution by means of a combination of fluids, diet and irrigation therapy. Usually following treatment the urinary tract is left perfectly normal and the prognosis is excellent if the predisposing factors have been done away with. The pathologic changes in the cases of simple precipitations about the pyramids or in the kidney pelvis itself are very slight. The entire kidney and kidney pelvis are normal except for evidences of slight irritation of the mucosa by the precipitated particles. Occasionally, in patients with frank hypercalcinuria, precipitations are present in the tubules.

Table 1.—*Conditions Predisposing to Calcium Phosphate Urolithiasis*

1. Disease producing prolonged immobilization of the body:
    a. Fractures of the spine or extremities associated with prolonged immobilization of large bones
    b. Chronic osteomyelitis
    c. Chronic arthritis or other bone joint disease producing immobilization of large portions of the skeleton
    d. Neurologic damage as a result of trauma or disease producing prolonged immobilization
    e. Chronic visceral disease requiring prolonged recumbency
2. Changes in the urinary organs:
    a. Congenital anomalies associated with stasis
    b. Acquired obstruction—stricture of urethra and the like
    c. Paralysis of urinary passageway
    d. Introduction of infection into urinary tract
    e. Foreign body in urinary passageway
3. Endocrinopathies:
    a. Hyperparathyroidism
    b. Hyperthyroidism?
    c. Hyperpituitary disease?
4. Focus of infection elsewhere in body?
5. Vitamin deficiency or excess
    a. Vitamin A deficiency?
    b. Vitamin D excess
6. Metabolic abnormalities
    a. Idiopathic hypercalcinuria
    b Changes in colloids?

Note. Conditions with question mark are put in mainly on a theoretical basis. Others are put in on the clinical basis.

In contrast, with the onset of infection there is much more rapid growth of stone, more extensive precipitation and, histologically, in addition to evidences of round cell and polymorphonuclear infiltration in the pyramids there may be precipitations of calcium phosphate in the tubules, ulceration of the tips of the pyramids and sometimes calcifications on these ulcerations (fig. 2). This occurs more frequently when infection is present than even in the presence of hypercalcinuria. Occasionally, possibly associated with focal infection, there is a localized area of ulceration with plaque formation such as described by Randall. The presence of severe infection alters the problem. Adequate drainage must be instituted at all costs and the infection controlled before irrigation therapy can hope to be successful. If adequate drainage cannot be instituted by ureteral catheter, open surgery must be done to do this. Otherwise very rapid growth of the stones will take place, because of

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Paper published under the auspices of the Section on Urology.

[1] Flocks, R. H.: The Preventive Treatment of Calcium Urolithiasis, Clinics **3**: 103-132, 1944. Harrison, J. H.; Botsford, T. W., and Pierce, F. R.: The Management of Urinary Lithiasis in an Army General Hospital, J. Urol. **53**: 282-294, 1945. Leadbetter, W. F., and Engster, H. C.: Problem of Renal Lithiasis in Convalescent Patients, ibid. **53**: 269-281, 1945. Milbert, A. H., and Gersh, I.: Urolithiasis in the Soldier, ibid. **53**: 440-446, 1945.

[2] Flocks, R. H.: The Preventive Treatment of Calcium Urolithiasis: The Important Role of Early and Frequent Roentgenographic Examinations, J. Urol. **53**: 427-439, 1945.

the presence of the infection. If this is done early and adequate supportive and chemotherapy instituted to control infection, irrigation can then be carried out for removal of any stones which have not been removed at the time of the nephrostomy. If this is not done early

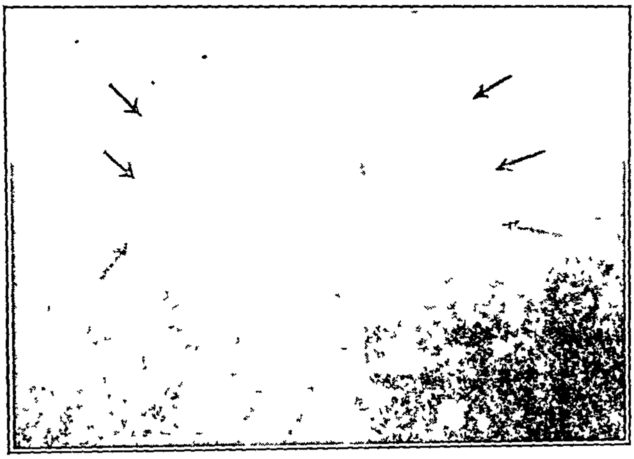

Fig 1 (case 1) —Appearance of bilateral renal calculi after a period of immobilization for bilateral slipped epiphyses Note how these follow the caliceal configuration These passed after the institution of a regimen of motion, forced fluids and a high vitamin, acid ash diet.

and rapidly there is a very good possibility of the loss of the kidney because of extensive renal damage due to the infection.

In late chronic cases with little or no infection, or a good deal of infection, there is another complication, and that is distortion of the calices and kidney pelvis with disturbance of the peristalsis of these structures due to scar tissue and fatty peripelvic and pericaliceal infiltration, so that good drainage of these structures is difficult to obtain and as a result recurrence of stone formation is a very good possibility. (Figures 3 and 4 are illustrative of late calcium urolithiasis.)

The x-ray characteristics of early calcium phosphate urolithiasis are quite definite. When slight infection is present and the case is seen early, there is a typical irregular opacity suggesting depositions of calcium salts usually around the pyramids in the calices but occasionally in the kidney pelvis itself. (Figure 5 *A*, *B* and *C* illustrates this condition.) A short history between the predisposing conditions and such x-ray films are definitely indicative of early calcium phosphate urolithiasis. When severe infection is present there is usually some evidence of consolidation of the calcium particles into definite stone, and the configuration of the calices is not always followed (fig. 5 *D*). In addition, of course, there is evidence of dilatation of the kidney pelvis in some cases and other evidences of infection and obstruction. In late cases the stone shadows are much more dense and may or may not follow the configuration of the calix. The most characteristic thing, however, is the pronounced density of the stones (fig. 5 *E*). In addition, extensive changes in the calices, kidney pelvis and kidney, associated with the long and intermittent obstruction and infection, are usually present. When the stone shadows are very dense, the condition has definitely passed from the stage of early calcium urolithiasis to the stage of late calcium urolithiasis.

The nature of early calcium phosphate urolithiasis determines its treatment, and this treatment is different from the ordinary treatment of renal stones (tables 2 and 3). Ordinarily the treatment of renal stone consists in the removal of the stone, or stones, and the correction of any changes in the urinary tract which have become associated or have occurred as a result of the presence of the stone. Moreover, any predisposing or etiologic factors which might have caused the stone are also corrected if possible. In early calcium phosphate urolithiasis one faces a peculiar situation. The stone formation is usually primarily in the calices. It is very extensive throughout the kidney. The stone, instead of being a solid, hard object is a soft, mushy thing which cannot be easily removed by the ordinary pelvic or nephrolithotomy, so that following operative procedure the incidence of recurrent stone is very high because particles of stone are permitted to remain behind, infection is introduced and new stone formation rapidly occurs. Moreover, because of the extensiveness of the stone formation and possible involvement of multiple calices, much damage is done to the kidney, the calices and the pelvis, with a great likelihood of resulting scarring, stasis and new stone formation. All in all, the conditions are ideal for either pseudo or true recurrence of the stone following operative procedure (fig. 5 *B* and *C*). To cope with such a situation the operation of Dees[3] was devised. This consists of introduction into the kidney pelvis of a substance which will coagulate and collect all the particles of stone in its meshes and then the clot is removed through the incision in the pelvis. This is of definite help but usually leaves fragments behind in the pelvis even in favorable cases which act as the nuclei for recurrences.

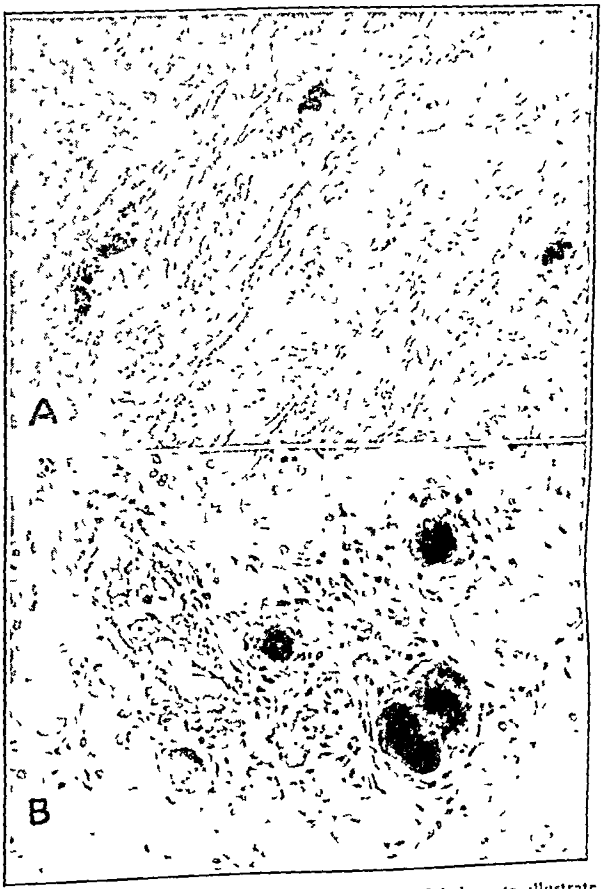

Fig 2 (cases 2 and 3) —Microscopic sections of kidney to illustrate calcium phosphate precipitations in the renal tubules in cases of renal lithiasis associated with hypercalcinuria and infection

By the early recognition of early calcium phosphate urolithiasis before decided consolidation of the stone has occurred, such an operation may be avoided. Irrigation therapy,[4] either through ureteral catheter, double ureteral catheter, nephrostomy or pyelostomy tube, intermittently or continuously, with acetic acid solutions, citrate solutions, citrate solutions with magnesium oxide, malic acid solutions and solutions containing proteolytic enzymes, will usually break up the particles and cause them to pass with the least trauma to the kidney pelvis (table 3). Infection is controlled by means of sulfathiazole, penicillin, fluids and adequate drainage. By the early recognition of this condition and the recognition of the value and possibilities of irrigation treatment, many kidneys and many lives can be saved. In fact, in "early" calcium phosphate urolithiasis open operation is contraindicated until irrigation treatment has been given a thorough trial; and, if open operation with removal of much of the stone is performed, postoperative irrigation through a pyelostomy or nephrostomy tube is of great value.

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[3] Dees, J E Use of Intrapelvic Coagulum in Pyelolithotomy, South M. J. 36: 167-175, 1943.

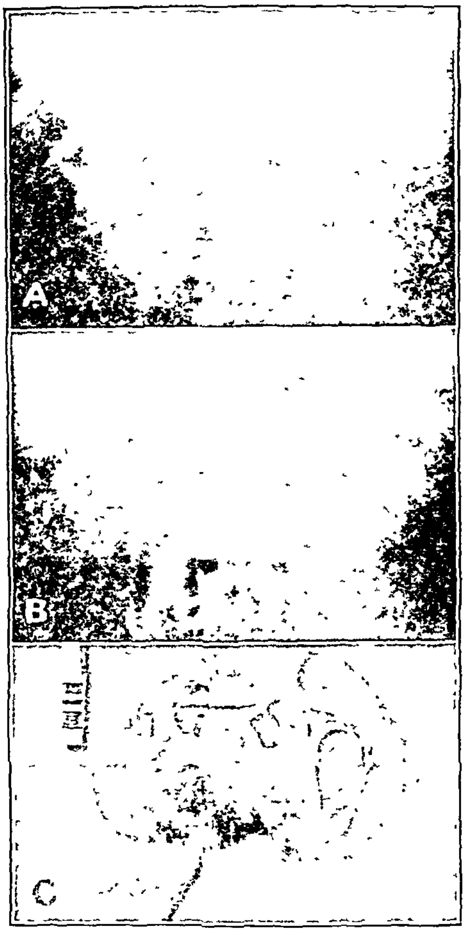

Fig. 3 (case 4).—Late calcium urolithiasis without infection: *A*, plain film; *B*, intravenous pyelogram; *C*, gross appearance of kidney.

Figures 1, 5 *A*, *B* and *C* and 6 show cases which illustrate the treatment for early calcium phosphate urolithiasis.

Figure 1 illustrates the simplest type of situation. The condition was recognized early. There was no infection, and it was possible to cause the breaking up of particles and their passage through the urinary tract by forcing fluids and an acid ash diet. Such a situation is rarely observed.

Figure 6 illustrates another situation. Here a ureteral catheter is passed up to the kidney pelvis and permitted to remain inlying. A continuous drip of dissolving solution, about 500 cc. in twenty-four hours, is permitted to run through this catheter into the kidney pelvis. This bathes the stone fragments and then passes down around the catheter into the bladder. Much fluid is given to keep the urinary output high. Manual irrigations of the kidney pelvis through the catheter are carried out thoroughly twice daily. Usually the ureteral catheter is changed weekly. In a few weeks the stone has been broken up and the particles have been removed. Infection is carefully controlled by all means at hand.

In cases in which there is much infection, in which a ureteral catheter is not well tolerated or in which dense stones (late calcium urolithiasis) are present, irrigation therapy alone is contraindicated. Open operation with removal of all stone possible followed by irrigation therapy through a pyelostomy or nephrostomy tube is the treatment of choice. Such situations are illustrated in figures 5 *D* and *E* and 7.

REPORT OF CASES

Case 1 (fig. 1).—A boy aged 16 years was placed in a double hip spica cast on Oct. 18, 1935. The urine was normal. He was in the cast until Dec. 24, 1935, at which time he had pain in the right side and hematuria. Films then (fig. 1) showed bilateral renal calculi with good functioning kidneys bilaterally and no deformity of the urinary passageways. The pH of the urine was 7.0. The calcium and phosphorus of the blood were normal. The patient was started on motion, forced fluids and a high vitamin A acid ash diet. By May 26, 1936 he had passed many small stones, and a flat film showed only one small stone shadow in the left kidney. On Dec. 15, 1936 the urine was normal, with a pH of 5.2, and the x-ray films were normal.

Case 2 (fig. 2 *A*).—A person aged 34 years, with a history of fracture of the pelvis and injury to the bladder and urethra, had a long period of recumbency, with the formation of bilateral renal lithiasis. Death was due to severe associated infection and uremia. There was extensive bilateral calcium phosphate renal lithiasis, with calcium phosphate precipitations in the tubules of both kidneys.

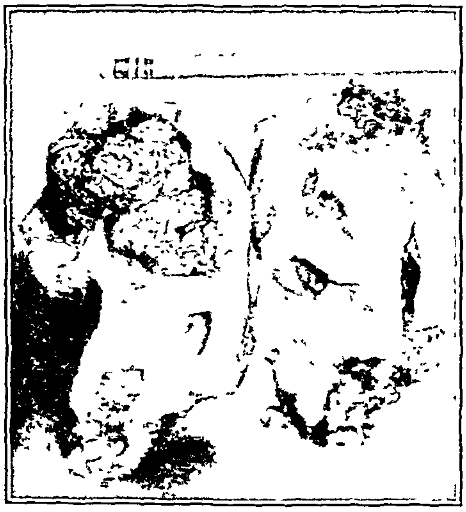

Fig. 4 (case 5).—Late calcium urolithiasis with infection. Note the hard calcium phosphate staghorn stone. Note the extensive destruction of calices and pelvis and fibrosis of the entire kidney with extreme fatty replacement. No calcium precipitations are present in the renal tissues, however.

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[4] Hodge, I. T.; Hollar, B. L., and Way, R. A.: A New Series of Citrate Buffers for Use in Urinary Tract Lithiasis, J. Urol. 48: 204-206, 1942. Suby, H. I.; Suby, R. M., and Albright, F.: Properties of Organic Acid Solutions Which Determine Their Irritability to the Bladder Mucous Membrane and the Effect of Magnesium Ions in Overcoming This Irritability, ibid. 48: 549-559, 1942.

Case 3 (fig. 2 *B*).—A person was bedridden, with a large bladder carcinoma partially blocking both ureters. Bilateral extensive early calcium phosphate renal lithiasis was present, with infection. The combination of all this caused death. Microscopic study revealed extensive calcium phosphate precipitation in the tubules.

Case 4 (fig. 3).—A white man aged 47, who appeared healthy, was admitted on Feb. 7, 1944 with a history of intermittent attacks of pain going back to 1935, always on the right side. No definite etiologic factor could be ascertained. The urine showed a p_H of 6.0 and was normal except for an occasional red blood cell per high power field. Because of the presence of a normal left urinary tract and a coraliform late calcium urolithiasis on the right side with a good deal of distortion of the lower calices on the right side, irrigation therapy alone or after nephrolithotomy was felt to be contraindicated, and right nephrectomy was performed Feb. 17, 1944. The result thus far has been excellent.

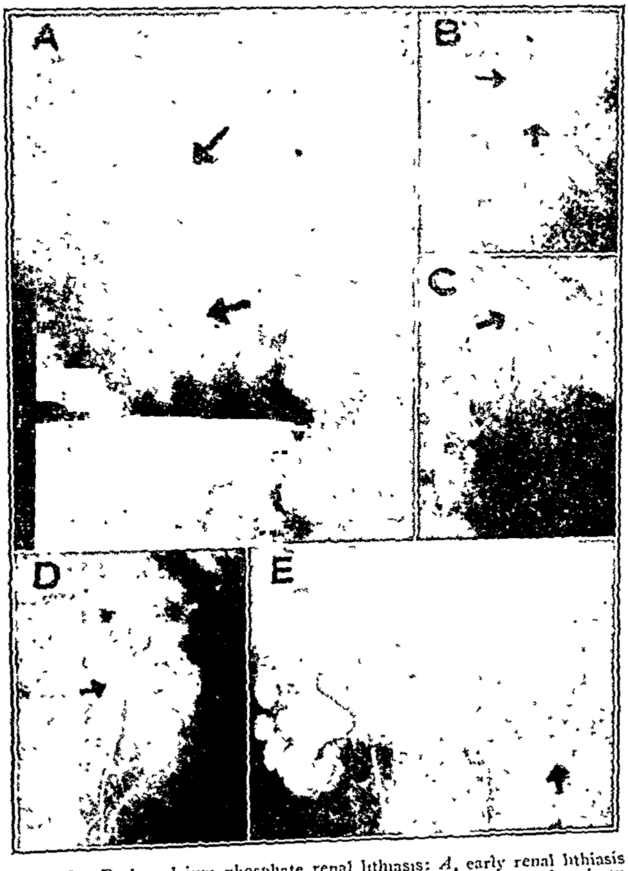

Fig. 5.—Early calcium phosphate renal lithiasis: *A*, early renal lithiasis appearing eighteen days after the onset of recumbency for pelvioplasty on opposite kidney. Routine roentgenographic check-up shows stones in the lower calices of the right kidney. These are characteristically not very dense and have the V shaped appearance because they follow the configuration of the calices Irrigation daily through an indwelling ureteral catheter with 0.25 per cent acetic acid solution caused these to disappear in five days. *B* and *C*, early calcium phosphate urolithiasis in the upper calix of the left kidney in case 6. Note the lack of density of the stone shadow and the outline of the stone which follows the configuration of the calices. Note the lack of deformity of the pyelogram. Such a situation is ordinarily ideal for irrigation therapy and unsuitable for open operation. *D*, early calcium phosphate urolithiasis Plain film Note the lack of density of the x-ray shadows with the consolidation of the stone so that it no longer follows the caliceal configuration. Such a case is suitable for irrigation therapy by ureteral catheter only if infection can be easily and rapidly controlled. It is probably best treated by pelviolithotomy followed by irrigation therapy and intensive treatment for infection. *E*, late calcium phosphate urolithiasis. Plain film showing extensive bilateral staghorn calculi. Note the intense density of the shadows. This is characteristic of late calcium phosphate urolithiasis. Such stones are best treated by open surgery. If the condition is unilateral, nephrectomy is indicated. If nephrectomy is contraindicated, combined pelvic and nephrolithotomy, followed by irrigation therapy, is indicated See figure 7. This was done in this case with good results on the right side. The left side is to be done at a later date.

This was an instance of extensive late hard calcium urolithiasis without infection. No precipitations were found in the tubules on microscopic study. If bilateral stones had been present this would have been a perfect case for nephrolithotomy with postoperative irrigation therapy.

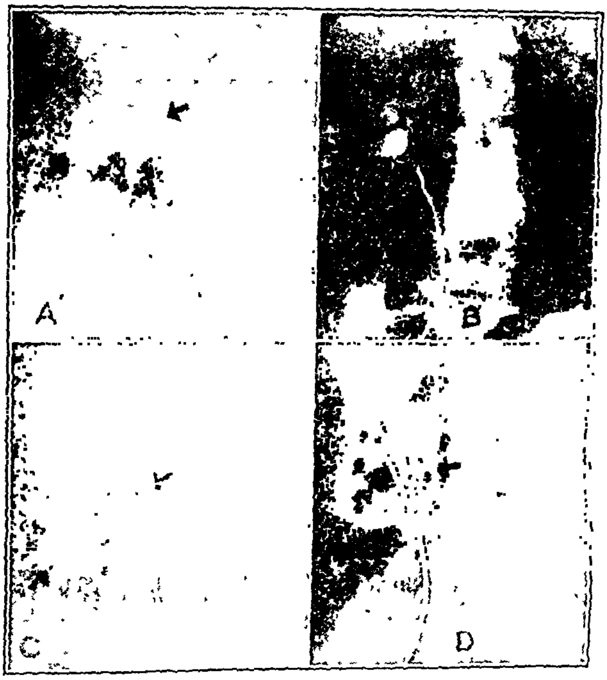

Fig 6 (case 7)—*A*, appearance at time patient was admitted to the hospital; *B*, plain film showing condition three days later, when irrigation had been going for two days; *C*, plain film on April 2, after twenty days of irrigation therapy. *D*, air pyelogram on April 16, thirty-four days after the institution of irrigation therapy. The stone has completely disappeared and the kidney infection is completely cleared up.

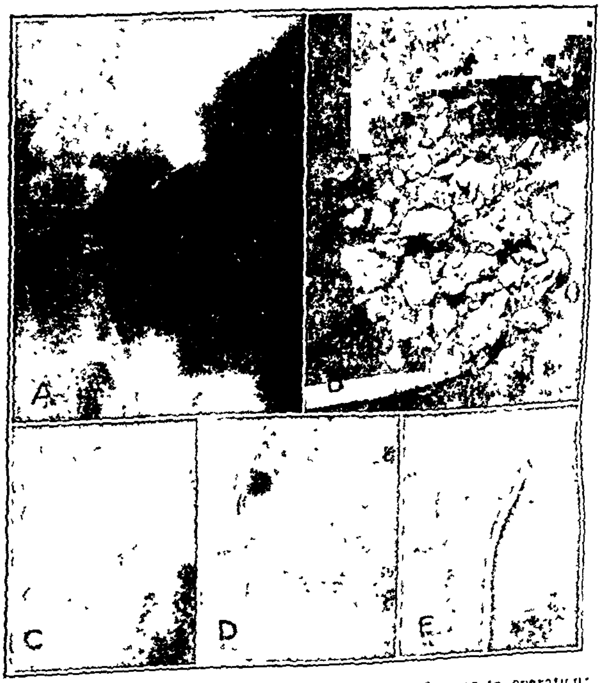

Fig. 7 (cases 8 and 9).—*A*, appearance in case 8 prior to operation; *B*, fragments removed through pelvic incision *C*, condition in left kidney in case 9 prior to operation; *D*, plain film with stone shadows remaining after operation and prior to irrigation therapy; *E*, plain film illustrating condition after four months of irrigation therapy; the fragments have all disappeared.

Case 5 (fig. 4).—A white man aged 39 was admitted on Nov. 9, 1944 with a long history of recurring left perirenal abscess formation following a gunshot wound in that region in 1936. He now is chronically ill with tenderness over the region of the left kidney. The urine is alkaline and badly infected. Films reveal a normal right urinary tract and a nonfunctioning calculous pyonephrosis on the left side. Left nephrectomy was performed on November 13 with excellent postoperative result.

CASE 6 (fig. 5 *B* and *C*).—A white man aged 33, admitted to the University Hospital on Feb. 8, 1940, had a story of having an appendectomy in May 1939 with postoperative retention necessitating many catheterizations. These were followed by evidences of urinary tract infection. Symptoms on admission were aches and pains in the left upper abdomen. Physical examination showed definite evidence of a moderate chronic prostatitis and some pus in the left kidney urine, which was alkaline and showed Proteus vulgaris on culture. The plain film, *B*, showed the calculus as described in the upper calices of the kidney. *C*, the intravenous pyelogram, showed no deformity of the kidney pelvis and good function of the kidney. The findings and the history were typical for early calcium phosphate renal lithiasis. With our present knowledge of this condition and with the improvements in the technics of irrigation therapy, irrigation therapy would have been carried out in this case. However, at that time, February 1940, a left nephrolithotomy was decided on. The left kidney was exposed, and this appeared essentially normal. The stone, which was found to be really a cast of the upper calix, was soft and mushy, and part of it stuck to the tips of the calix. It broke into many small fragments when an attempt was made to remove it. Because of this and because of hemorrhage from the kidney substance, nephrectomy was decided on and performed. The postoperative recovery was excellent, and the patient has continued to be in good health. Microscopic study of the removed kidney showed this to be essentially normal except for a mild chronic inflammatory infiltration adjacent to the epithelium which had been in contact with the stone. There was no evidence of calcium precipitation in the tubules.

TABLE 2.—*Preventive Treatment of Calcium Phosphate Urolithiasis in Patients Who Are Extensively Immobilized Over Long Periods of Time*

Measures	Accomplishes	Comment
1. Maintenance of large fluid output	a. Counteracts stasis by producing a steady flow of urine b. Diluted calcium concentration especially important during period of hypercalcinuria (first 6 to 12 weeks of immobilization) c. *Minimized likelihood of infection* d. Washes out débris and small calcium precipitates	a. Measure intake and output carefully; remember in cases of neurologic involvement that residual urine may cause inaccuracy in output measurement
2. Control of diet High vitamin A and B acid ash diet usually used	a. High vitamin A and B improve epithelial nutrition b. Increase acidity of urine; calcium phosphate is more soluble in an acid than in an alkaline urine	a. Check urinary p_H daily with nitrazine paper b. Discontinue acid ash diet if urine remains alkaline from any cause such as infection with urea-splitting organisms
3. Control of stasis a. Movement of patient b. Provision of adequate drainage by catheter or surgery if necessary c. Maintenance of a large fluid output	a. Makes sure that no portion of urinary tract is dependent or undrained for too long a time b. Minimizes infection c. The use of a catheter makes possible irrigation of pelvis or ureter with special solutions such as citric acid and malic acid solutions	
4. Control of infection a. Maintenance of large fluid output b. Adequate drainage c. Chemotherapy: 1. Sulfacetimide 4 Gm. daily in drug of choice 2. Sodium sulfathiazole 4 Gm. daily 3. Other sulfonamide 4 Neoarsphenamine 0.3 Gm. two times weekly in some staphylococci infections 5. Penicillin, very useful	a. Decreases particles in urine (pus and epithelial débris, which may act as nuclei for stone formation) b. Infection with urea-splitting organism produces alkaline urine, which causes precipitation of calcium phosphate	a. Watch urine p_H with nitrazine paper b. Study centrifuged urine specimen daily for pus cells
5. Continuation of treatment for 3 months after immobilization has ceased	To remove any small precipitation which may have formed during period of stasis and hypercalcinuria	
6. Frequent radiographic check-up examinations during illness and every 3 months for one year after immobilization has ceased	This is very important; small precipitates may not be visualized in early urograms but may be visualized later after they have grown; many stones (especially in patients with neurologic lesions) may be silent for years and thus produce irreparable renal damage unless they are visualized by x-ray examination and treatment instituted	

Note: Henline has shown that the emptying time of the renal pelvis is greatly increased by a small urinary output and decreased by a large fluid output (Lowsley and Kirwin: Clinical Urology).

Case 7 illustrates (1) the appearance of a staghorn calculus in the right kidney associated with immobilization due to generalized atrophic arthritis, (2) the typical x-ray characteristics of relatively early calcium phosphate renal lithiasis—lack of density in most of shadow, the following of the configuration of the calices, and absence of evidence of infection, and (3) the dissolution of a staghorn calculus by ureteral catheter irrigation with citric acid and malic acid solutions with magnesium oxide.

CASE 7 (fig. 6).—A white woman aged 56, first seen in the University Hospital in 1937 with generalized atrophic arthritis, showed little improvement on treatment for this. She was admitted on March 12, 1945 for a check up examination. A plain film showed extensive cholithiasis and a staghorn calculus in the right kidney. The pyelogram on the left side was essentially normal. The urine had a p_H of 7.0 and a moderate number of pus cells per high powered field, with a mixed infection with colon bacilli and staphylococci. An indwelling ureteral catheter was put in place and the patient given forced fluids, penicillin therapy and irrigation therapy through the ureteral catheter on alternate weeks with citric acid magnesium oxide and Zephiran and malic acid magnesium oxide and Zephiran solutions. The results are shown in figure 6.

Cases 8 and 9 illustrate combined nephropelvic lithotomy and large staghorn calculi followed by irrigation treatment to remove any fragments of stone remaining. The problem of complete removal of remaining fragments in such cases has been a bugbear because of extreme renal damage caused by many nephrotomies in order to remove all fragments. By means of postoperative irrigation therapy this difficulty has been overcome in many cases.

Case 8 (fig. 7 *A* and *B*).—A white man aged 48 entered the hospital on Jan. 3, 1945 with a long history of urethral stricture and intermittent attacks of pain and renal infection on the left side. Physical examination showed the presence of a small stone in the lower calix of the right kidney and a large staghorn calculus in the left kidney with bilateral renal infection. On January 12 pelvionephrolithotomy was carried out. In order to avoid large incisions through the kidney substance and thus preserve as much renal substance as possible, the stone was broken up through the incision in the pelvis with a strong forceps and *B* illustrates the fragments removed through the pelvic incision. *A* shows the plain film taken prior to the operation. Following this procedure a nephrostomy tube was left in place and a continuous drip of 0.25 per cent acetic acid solution was alternated with citric acid magnesium oxide solution. The patient left the hospital on February 7. The incision was well healed, and no fragments were remaining that could be demonstrated on the x-ray film. The kidney was functioning on the intravenous pyelogram. He had in the meantime passed the stone from the right kidney.

Table 3.—*Treatment of Patients with Calcium Phosphate Renal Lithiasis*

1. All measures outlined under Preventive Treatment of Calcium Phosphate Urolithiasis in table 2
2. Institution of adequate drainage:
    a. Urethral catherization
    b. Ureteral catheterization
    c. Nephrostomy
    d. Pyelostomy
3. Irrigation of urinary passageway with antiseptic and "dissolving" solutions to control infections and dissolve and remove fragments of stone
    Valuable solutions are: 0.8 per cent sulfanilamide solution
    0.25 per cent acetic acid solution
4. Avoidance of pseudorecurrence
    When removing multiple stones or a branching stone, x-ray check-up during the operation is of great value in preventing a small stone from being left behind
5. Calicectomy and other operative procedures on urinary tract to correct acquired or congenital urinary stasis
6. Surgical lithotomy, or nephrectomy

* Citric acid (monohydrous)	32.3 Gm.
Magnesium oxide (anhydrous)	3.8 Gm.
Sodium carbonate (anhydrous)	4.4 Gm.
1/20,000 aqueous Zephiran q. s. to	1,000 cc.
† Malic acid	32.3 Gm.
Magnesium oxide (anhydrous)	3.8 Gm.
Sodium carbonate (anhydrous)	4.4 Gm.
1/20,000 aqueous Zephiran to	1,000 cc.

Proportions of acid to sodium carbonate can be changed to raise pH and thus lessen irritability if this is present (see Hodge, et al).

* Citric acid solution in 1/20,000 Zephiran.

† Malic acid solution in 1/20,000 Zephiran.

Case 9 (fig. 7 *C, D* and *E*).—A white woman aged 54 was seen in conjunction with Dr. A. G. Fleischman of Des Moines, Iowa. She had a long history of bilateral nephrolithiasis and ureterolithiasis. When Dr. Fleischman saw her in June 1943 she had a stone in the lower calix of the right kidney and a large stone in the left kidney pelvis and several smaller stones in the lower calices of the left kidney pelvis. She was having symptoms of pain and infection on the left side. Dr. Fleischman exposed the left kidney and removed the large stone. Because of bleeding from the nephrotomy wound he was unable to remove the smaller stones, and he inserted a nephrostomy tube for drainage. The patient got along nicely and I saw her on June 31. At that time she was feeling well and she had at least four stones, the smallest about the size of a pea and the largest about 1.5 cm. in diameter, located in the left kidney pelvis. Irrigation with citric acid magnesium oxide solution was carried out intermittently through the nephrotomy tube. In four months the fragments had completely disappeared.

THE REMAINING TASK

MAJOR GENERAL NORMAN T. KIRK
The Surgeon General

While the Regular Army, of which I am an officer, furnished the nucleus of the Medical Corps, its civilian components did the professional work. Our role was necessarily organizational and administrative; the civilian physicians took over from that point. We issued the administrative directives and implemented the professional policies; the basis for them was established by the professional consultants who came into the corps from civilian practice, and they were applied by civilian physicians. Credit for the results, therefore, rightly belongs not so much to the methods which were employed as to the men who employed them.

In 1940, just after the fall of France, the United States Army consisted of approximately 250,000 men and the Medical Department of about 1,600 officers, of whom about 75 per cent were in the Medical Corps. By Dec. 7, 1941 there were 1,613,000 men in the Army and 11,390 officers in the Medical Corps. On V-E day there were some 8,300,000 men in the Army and some 47,000 officers in the Medical Corps. The increment in the Army was chiefly by way of Selective Service. The increment in the Medical Corps consisted entirely of volunteers. I should be less than fair if I did not pay tribute to the physicians who served at home and, in particular, to the 33,000 who voluntarily and without recompense manned the Selective Service boards all over the country.

The American armed forces had better medical care in World War II than the soldiers of any army ever before received. More men were saved from death, more men were returned to military usefulness and more men were spared suffering and mutilation and disfigurement than was dreamed possible at the end of World War I or, for that matter, at the beginning of World War II.

In the magnitude of our task we inevitably made mistakes. Some men were given too much rank for their qualifications, and some men, many men, had far too many qualifications for their rank. As the war progressed, and as classification of medical officers according to their abilities and training became more accurate, many of those errors were corrected. Even if they remained uncorrected they were always honest errors, which arose chiefly from miscalculations and from human frailties of judgment.

Inevitably also in many instances we used our sparse military personnel uneconomically. Part of the wastage occurred because war itself is wasteful. Part of it occurred because the provision of medical care during wartime must be guided by the exigencies of battle and by strategic demands. In other words, the medical effort is always ancillary to the fighting effort. If you will recall that the preparation for D-day took well over a year, that the staging for the invasion occupied something over twelve weeks and that medical units had to be prepared and had to stage along with the fighting units, you will understand why, for long periods of time, a certain proportion of our professional skill was incompletely utilized.

Many instances of wastage were apparent rather than real. I think, for example, of a hospital with a 90 bed capacity on the coast of Delaware. We tried always to keep a highly competent surgeon there, though his

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Read at the annual dinner of the Society of Surgeons of New Jersey, Plainfield, N. J., Jan. 30, 1946.

services were never fully utilized. But that particular hospital was part of a coast artillery station at the mouth of a river which has been described as the most heavily mined 18 miles in the world. It also served an air field a few miles away where navy pilots practiced blind night landings in preparation for night carrier landings. We still try to keep a highly competent surgeon at this hospital. At present the mines at the mouth of the river are being removed and detonated, and I am told that that process is more dangerous than laying them. Moreover, the Coast Artillery personnel is now conducting experiments with 16 inch guns. Neither during the war nor since have there been any serious accidents at that particular station, but the potentialities continue to exist and we must continue to be prepared for what might happen there, just as we were formerly prepared for what might have happened.

I know that civilian physicians do not take kindly to the regimentation of the Army. One of our most delicate problems was and still is to strike a balance between the man who keeps enough of his native independence to be a usefully aggressive officer and the one who keeps so much that he ceases to be useful at all to the Army.

Regimentation is usually much less arbitrary than it seems. Early in the war large numbers of operations were performed for such conditions as internal derangements of the knee, herniated vertebral disks, varicose veins, varicoceles and pilonidal sinuses. In army parlance these conditions were classified as EPTI, that is, existing prior to induction. Within a year operations for most of them had been stopped by directives from the Surgeon General's Office. Men with these conditions either served with them, on limited service if necessary, or were separated from service because we had found, by painful experience, that in attempting to correct them we were creating a host of other problems. Pilonidal sinus is the outstanding illustration. The technics for its correction are multiple and are correspondingly unsatisfactory. They proved even less satisfactory in the Army than in civilian life. In the first nine months of 1942 in twenty hospitals of a single service command there was an estimated loss of 30,000 man days as the result of surgery for pilonidal sinus alone. Multiply that loss by nine service commands and you will understand why a directive was issued forbidding elective surgery if the condition was symptomless and permitting only incision and drainage if the sinus or cyst had become infected.

CARE OF THE PARAPLEGIC

Against these confessions of difficulties and errors—and if time permitted I could, of course, make many more—let me describe an achievement which I think you will agree compensates for many errors. The program for paraplegics concerns only a relatively small number of men, but to me it is a shining example not only of the professional competence of the physicians who served and are serving in the Army but even more of their humanity.

Until this program was instituted, men with spinal cord injuries and resulting paralysis were regarded as hopeless invalids, and I fear that they were treated as such. That attitude has been completely reversed by the Army Medical Corps, which met the problems of this injury with all the resources of the profession.

First, operation was performed promptly in all proved or suspected cases of spinal cord injury, chiefly because exploration proved to be the only sure way of determining whether or not the condition could be relieved surgically. The operations were done only by skilled neurosurgeons, and the risk was incredibly small; thirty-two consecutive operations were done at one hospital, for instance, without a fatality. Operation was also done promptly; in one reported series 57 per cent of the patients showed improvement when they were operated on within five days after their injuries, against only 10 per cent when operation had been deferred beyond this period.

As soon as possible after wounding or operation the men were evacuated to the Zone of the Interior, where they were concentrated in nineteen special centers, again under neurosurgical direction. The next phase of management, however, was chiefly urologic. Suprapubic cystostomy had been done in all such cases before evacuation. Now the problem was to substitute a urethral catheter for the suprapubic catheter and then to establish a reflex bladder, which was usually accomplished by the institution of tidal drainage, and to prevent (or correct) urinary infection while these objectives were being achieved. Technic is no part of my story, but I do want to emphasize that this was the urologist's day and that he had specially trained corpsmen to help him, one or more of whom were constantly on duty in every paraplegic ward. No untrained attendant ever participated in the care of a paraplegic's bladder.

It was also the urologist's function to see to it that urinary calculi did not develop or that they were treated without delay if they had developed. Since stones have been reported as early as one month after recumbency, patients were investigated from this angle as soon as they reached Zone of Interior hospitals. By prophylactic and conservative measures, in which such a simple but time-consuming procedure as frequent changes of position played a highly important part, most patients were kept free of stones, and with negligible exceptions stones which had already developed were eliminated without operation.

As to decubitus ulcers, patients who arrived in the Zone of the Interior with pressure areas properly protected seldom developed them here because every possible measure was employed to keep them free of this complication, frequent changes of position again being the most important part of the regimen.

Ulcers which had already developed furnished a major problem. They were usually multiple. At one center 130 ulcers were at one time under treatment in 45 patients. At another center 10,000 dressings were done in one month for this cause alone. Some lesions measured from 6 to 8 inches in diameter and involved the entire sacral area.

Ulcers were vigorously attacked from every angle by such obvious measures as support of pressure points, frequent changes of position, scrupulous attention to cleanliness and unremitting endeavors to keep the patient dry, and by aggressive surgical efforts to close the wounds by the principles of plastic surgery. These measures were estimated to have saved from six to twenty-four months of treatment in some cases. Not infrequently they saved life.

Perhaps the most important advance in the management of decubitus ulcers was the discovery of the enormous loss of protein by this route. In some instances the measured loss was as high as 50 mg. daily, and reversal of the albumin-globulin ratio was frequent. To attain a zero balance under these circumstances, let alone a positive one, was no simple matter.

It required the introduction into the patient of 150 to 175 mg. of protein daily. Whole blood and plasma were useful in emergencies, but the long-term solution of the problem required that most of the protein be introduced by way of the diet in a readily assimilable form. In such cases the internist took charge, and dietitians, under his direction, became responsible for individual patients.

Finally came the matter of ambulation. We did not deceive ourselves about that. Ambulation is beyond the capacity of all but a few paraplegics. But ambulation in the sense of getting about by braces and crutches sufficiently to care for themselves, is a definite possibility for most patients with cord lesions at or below the tenth dorsal vertebra and is a more guarded possibility for patients with lesions below the second dorsal vertebra. In lesions above that level ambulation is not possible, but a wheel-chair existence is.

In other words, so far as this program was concerned, a bedridden patient was simply not conceived of. When a man reached a paraplegic center it was taken for granted that he would be out of bed promptly, or at least as soon as certain physical deficiencies had been corrected, and that he would attempt to walk with equal promptness. An unexplained neurologic, vascular, cardiovascular and nutritional improvement always occurs when these patients begin to move about. Passive exercise is not a substitute for early attempts at ambulation and was never so regarded. To get the patient out of bed and on his feet was the goal in every paraplegic center for every man treated in it. We hitched our wagon to the stars, and we got where we were going in a surprising number of cases.

There has been nothing like these results in the previous history of neurosurgery; they were achieved against untold odds. The urologic care of the paraplegic is a never ending struggle against infection. Instruction in ambulation is tedious and difficult for instructor as well as for instructed. The care of decubitus ulcers is often a loathsome task, and the details of their prevention are endless. But in these army centers these difficulties were overcome by the unified efforts of neurosurgeons, plastic surgeons, orthopedic surgeons, urologists, internists, nutritionists, nurses, dietitians, physical therapists and hospital corpsmen.

The neuropsychiatrist was naturally called in when he was needed, but most of these patients were not neuropsychiatric and they were not permitted to become so. One reason was that they were kept busy. They were taught printing, woodwork, radio repairing, watch repairing, typewriting, photography and similar occupations at which even a handicapped man can do a day's work and by which he can earn a decent living. Finally, their domestic and family relationships were kept on an even keel.

The care of these patients was based above everything else on the preservation of sound morale. Every person who came into contact with them played his part in its preservation, but the keystone of the arch was the ward physician. He integrated every detail of supervision and management. He could not himself do for them everything that was done, but there was no detail of their care which he did not know intimately. He made regular ward rounds, of course, but he also went around on Sundays and holidays, and at odd times during the day and at night, and he became the confidant and friend of the men as well as their medical adviser. I doubt, indeed, if the doctor-patient relationship which developed in these wards has ever been equaled in the history of medicine; I am sure that it has never been surpassed. When a paraplegic patient was concerned, the ward physician never took no for an answer.

At one paraplegic center a young first lieutenant for six months, without other help, served as ward officer for 109 paraplegic patients in forty-seven different rooms. Christmas came soon after he was put in charge, and because he had imagination and sympathy as well as medical ability he went to the commanding officer with the suggestion that the men be permitted to have their families in with them for Christmas dinner. The commanding officer, I presume automatically, said no. Said the young officer—who had been an officer only four months—"I demand that these men have their families for dinner. They may not be here next Christmas. They have given everything for their country. They deserve to have their families with them on Christmas, and damn it, they are going to!" They did have them, and no one in the hospital had more to do with the success of the dinner than did the commanding officer. When a ward physician carries the ball for his patients in that manner—men have been court-martialed for less—you can readily understand why the morale in paraplegic wards, which was formerly the worst in every hospital, is now much the best.

OTHER TASKS

This program illuminates much of our remaining task. At the end of August 1945 there were 312,000 patients still in hospitals. At the end of December there were 180,000, 1,400 of whom were paraplegics. By next June it is estimated that there will still be approximately 70,000, of whom at least 600 will still be paraplegics.

Add to those paraplegics other categories of patients who also present special needs. At the end of November there were 11,350 patients in the nine centers set aside for plastic and hand surgery, who, it was estimated, still needed almost 31,000 operations. The plastic surgeons who had been working twelve to fourteen hours daily six days a week to carry this load were most of them eligible for separation on points. We froze them in the Army. I explained to them why we had to do it. They understood, and they are still doing their job. So are the physicians who are taking care of the 5,000 neuropsychiatric patients now in the hospital, 2,000 of them in closed wards, and the 1,000 patients with tropical diseases, the 1,800 with tuberculosis, the 300 blind men who are being rehabilitated and the thousands of other casualties of the war who, by the orders of the Chief of Staff, the Secretary of War, and the President of the United States, must not be discharged to civilian life or transferred to the Veterans Administration till army doctors have done for them all that modern medical science and skill can do.

The casualties of war, however, are only part of our medical responsibility. In view of the current agitation concerning demobilization I think it particularly important to emphasize our other tasks. I do not shut my eyes to the discontent which I know many medical officers must feel with the working of the army discharge system; though I am glad that the near hysteria which has afflicted some portions of the service has been notably lacking in the Medical Corps. I should be the last to claim that the system itself is perfect. I think it fair to emphasize, however, that even a perfect system cannot be perfectly applied and that individual exceptions, even though in most cases the exception will be found, on investigation, to be more apparent than real, always make for bitterness. I realize fully that the system has been particularly unfair to doctors, and particularly to doctors who are critical specialists. For most of them it has simply been abrogated. Points or no points, we had to keep them in service.

As General Eisenhower explained to Congress recently, demobilization has in general proceeded so successfully to date that two incompatibles have met head on sooner than had been expected, the speed of demobilization and the cold, hard facts of the commitments and obligations which this country has assumed both at home and abroad. Let me outline them in brief as the Chief of Staff described them in detail. They include: Occupation duties in Germany, Austria, Japan, Korea and certain Pacific islands. Supervision of government in enemy countries suffering from wartime devastation and shortages. Demolition of fortifications and other installations, including war-making potentials, of which 3,000 must be destroyed in Germany alone. Policing of international boundaries, of which there are 2,000 miles in Germany alone. Guarding of military stores, bridges, communication systems, electric installations and anything else which might be sabotaged. Construction and maintenance of transportation and communications systems. Constant surveillance of enemy populations, with the rounding up of war criminals still at large and the suppression of crime, which in Germany, at least, is rampant. Provision of emergency supplies of food and other stores for enemy countries. Maintenance of law and order in such friendly countries as the Philippines, which are not yet prepared to take over this task. Registration of the graves of the United States soldiers and sailors who died in action overseas. Supervision of prisoners of war in conquered countries and in the United States. Operation of air transport in all enemy countries. Operation of centers for displaced persons, of which there are 365 in Germany and 85 in Austria. Protection not only of captured matériel but of billions of dollars' worth of United States property all over the world, including such areas as Burma and India, in which we have no occupation duties. Operation of induction centers in the United States and conduct of the training of newly inducted soldiers both at home and overseas. Operation of camps, posts and other installations, such as staging areas and ports of debarkation in this country and overseas. Processing of separated personnel in the United States. It would be, said General Eisenhower, a final burst of irony to separate trained personnel (who have the points for separation themselves) serving at the separation centers and thus further delay large-scale demobilization.

These tasks, the Chief of Staff concluded, were assigned to the Army by Congress, and only competent authority, presumably Congress, can remit them. Some of them necessitate constant activity. Some of them require little more than the presence of troops against a potential emergency. But you do not, he concluded, send the firemen home when you pass a firehouse and see them with apparently nothing to do but play checkers.

No more can you send the doctors home under the same circumstances. General Eisenhower did not specifically mention the Medical Corps in the course of his remarks to Congress, but naturally he did not have to. Wherever American soldiers are on duty anywhere in the world, there must medical officers be with them. The flow of battle casualties has mercifully ended. But young men are still subject to all the usual diseases, from colds in the head to acute appendicitis. They are still subject to accidents, some of them inherent in their dangerous tasks, some of them, as an English physician caustically put it, arising from "the stupidities of fools." They still must be protected against tropical diseases. They still must be protected from the diseases born of wartime devastation and malnutrition. They still must be looked after at staging areas and on their way home. They still must be examined most thoroughly at separation centers, both for their own sakes and for the sakes of the taxpayers who will later foot the bill for errors as well as for genuine disabilities. Those who will replace them at home and overseas must still be examined at induction centers. Prisoners of war must still be cared for. Displaced persons are frequently medical problems before they are anything else.

In short, the Medical Corps can no more be permitted to fall apart, to "demobilize by demoralization," than can the rest of the Army. The physicians in civilian life would no more wish that to happen than do the physicians still in uniform. All military service, as has been well said, entails some hardship. The hardship to be borne by men who must remain in uniform longer than they like is simply an essential part of what has gone before. It cannot be evaded without placing in jeopardy the victory so arduously won in combat. It is indispensable to the completion of the job.

MEDICAL EDUCATION IN EUROPE

WILBURT C. DAVISON, M.D.
Durham, N. C.

European medicine has gone through a series of cycles, various countries taking the lead for one or more generations and then through the effect of wars or national pride falling behind, i. e. Egypt, Babylon, Greece, Rome and Italy in succession during the old days, and France, Great Britain, Germany and the United States during the last century. This rise and ebb of medical leadership should warn us that we may be at a dangerous peak and that either we must continue to climb or we shall fall like the others.

In the nineteenth century, medical schools were of three types: clinical, university and proprietary.[1] In France and Great Britain the type was clinical, having grown out of the hospitals. However, in France the preclinical sciences fared badly, while in some, though not all, of the British schools general advances occurred in all the medical sciences. The university type of medical school prevailed in Germany, Denmark, Sweden, Norway, the Netherlands and German speaking Switzerland, largely on a lecture basis. Most of our own schools of that period were proprietary.

From the Department of Pediatrics, Duke University School of Medicine and Duke Hospital.

Read before the Forty-Second Annual Congress on Medical Education and Licensure, Chicago, Feb 11, 1946

This report is based on three years as a medical student at a British university before and during World War I, seven summers between Worlds Wars I and II visiting European pediatric clinics, being able to spend this past summer in England and Germany through the kindness of Major Gen Morrison C. Stayer, Brig Gen James Stevens Simmons and Col Thomas B. Turner, and last but not least conversations last summer in London and last week in Durham with Dr Daniel P. O'Brien, who represents the Rockefeller Foundation in Europe. The observations of Major H. M. Rozendaal, Capt J S Lichty and Dr E Y. Hartshorne, whom I accompanied on their survey of schools in the U. S. Zone of Occupation, also have been very helpful.

[1] Flexner, A: Medical Education in Europe, Bull 6, New York, Carnegie Foundation for Advancement of Teaching, 1912; Medical Education: A Comparative Study, New York, Macmillan Company, 1925. Rappleye, W. C.: Final Report of the Commission on Medical Education, New York, 1932.

The evolution of medical education started with the twentieth century in Europe and with the 1915 purge in our own country,[2] and these three types of medical schools became less distinguishable. By the end of World War I, all medical students received more or less instruction in the whole gamut of medical sciences from biology to psychiatry and public health. Except for France, in which clinical work is done in the first year, the curriculums at all European and British schools are much the same, starting with the premedical sciences and continuing five to seven years.[1] In one respect this schedule is better than ours, namely that the medical school either is responsible for premedical education, as at St. Bartholomew's, or controls it through examinations, as in the rest of Europe. American medical students would have a far more useful premedical preparation than is furnished at present by many of our colleges and universities if it were supervised by the medical schools.[3] Ours is the only country in the world in which premedical education is unsupervised.

Although the curriculums were more or less similar, medical education in the various European countries differed tremendously during the lull between World Wars I and II. It was good in Scandinavia, the Netherlands and Switzerland, variable in Great Britain and much lower than ours in the other European countries. Obviously, factors other than the curriculum are responsible, the three most important being the faculty, the students and the type of teaching. In the countries in which medical education is good the faculty is appointed on merit and the students are selected, rarely exceed one hundred in a class and learn "by doing" through practical laboratory and ward work. The following alphabetical survey is, like politics and religion, open to argument, and I hope that it will produce discussion helpful both to European and to American medicine:

Belgian medicine suffered from Flemish and Walloon squabbles and lacked a national medical policy. Except for several former CHB fellows and an occasional Nobel prizewinner, Belgium has little with which to rebuild. However, 150 Belgian scientists have recently been sent to Great Britain for study.

Medicine in the prewar Balkans was very poor. In Bulgaria and Yugoslavia it was largely Austrian, and in Rumania it was under French influence. In the other two countries little is known of their postwar plans, but in Yugoslavia, Stampar, a former Rockefeller and Flexner fellow, is being helped by Tito to establish public health and medical education.

Czechoslovakia has liquidated the German medical school in Prague, although before the war it was better than the Czech school. The future seems grim, for many of the Czech teachers were killed.

Denmark has been said to be a perfect state medically.[4] It is small enough to control all of the factors which tended to ruin medical education in many of the larger countries. The public health program and the Serum and Carlsberg laboratories are the envy of many nations. However, outside contacts are now necessary to remove the putrefaction of the German invasion and occupation.

Iceland, a former Danish possession, or vice versa, has fared better, as the Rockefeller Foundation provided fellowships for several physicians from Iceland during the war.

Little information is available on the present condition of the medical schools of the Baltic states Estonia, Latvia and Lithuania. Before World War II several former Rockefeller fellows had helped raise medical standards.

Between World Wars I and II the medical school at Helsinki, Finland, was of the usual Scandinavian excellence, but no news of its present state is available.

Medical education in prewar France, largely because of the mobs of unselected students, was a disgrace to Louis, Laënnec and Pasteur. French medical education worsened during the German occupation, and now the French government is making an effort to improve standards. With the assistance of the Rockefeller Foundation fifty young French medical teachers are being maintained at several medical centers in this country.

Germany is a typical example of the European countries in which medical education has not kept pace with the advances in medicine, and therefore the situation is described in more detail.[5] There were at least four reasons for the low state of German medicine: 1. Too many students with little or no selection; of the 6,000 total university students at prewar Munich, 4,000 were medical! Part of this overcrowding was due to state support, which made rigid selection politically difficult, but more of it was due to the payment of the faculty on a "per student" basis. The larger the country's population, of course, the harder it is to keep the classes small. 2. Arrogant self satisfaction with the status quo prevented improvement. 3. Some of the faculty were replaced by worthless Nazi party members. 4. All of the teaching was by lectures without adequate laboratory and clinical work. In none of my tween-war visits to the German and Austrian pediatric departments did I see a medical student in the wards. Czerny, Finkelstein, Pirquet and the others would spend hours "walking the wards" with their assistants and visiting foreigners, but their only contact with students was a lecture or demonstration in the Hörsaal. They could see no reason why students should be taught bedside medicine. They had never heard of Osler's statement that the epitaph he wanted was "He brought medical students into the wards."

Furthermore, the segregation of research workers from the medical school into Kaiser Wilhelm institutes has reduced the productiveness of German medicine so that the medical journals for a generation have been of little scientific value. Except for the malarial treatment of dementia paralytica by Wagner-Jauregg, the insulin shock therapy of psychoses by Sakel, cellular metabolism by Warburg and thoracoplasty by Sauerbruch, nothing has been produced by Germans and Austrians since 1912 comparable to their pre-World War I medical contributions or to the current discoveries of American and British investigators, of which the Germans are contentedly ignorant. As an example of this attitude, Kuhn, a biochemist at the Kaiser Wilhelm Institute at Heidelberg, told us that he had an epoch making antiseptic. We asked if it was equal to penicillin. He promptly replied that it was better. He then had to admit that he had not compared them, but he said that anyway he knew that his drug was more powerful!

Fittingly, the war had the worst effects on medical education in Germany and Austria. As already mentioned, their pre-World War II educational standards were low but now, except for the intact medical schools of Heidelberg, Marburg and Erlangen in the U. S. Zone of Occupation, Göttingen in the British area and Tübingen in the French zone, the physical facilities of most of the other twenty-four universities[6] are 50 to 80 per cent destroyed. At Göttingen the war actually improved medical education by destroying the large lecture room so that instead of admitting 800 first year students as usual, the class had to be limited to 150. However, the faculty of medicine did not agree with us that this limitation and consequent possibility of improving instruction more than offset their personal reduction in student fees. The other German medical schools have improvised usable accommodations for the hospital care of patients in their communities, but their facilities for teaching are inadequate.

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[2] Flexner, A.: Medical Education in the United States and Canada, Bull. 4, New York Carnegie Foundation for Advancement of Teaching, 1910.

[3] Davison, W. C.: The Future of Medical Education, to be published.

[4] Parran, T.: Public Health Organization in Denmark, Pub. Health Rep. **42**: 1417-1445 (May 27) 1927.

[5] Davison, W. C.: The German University Medical Schools During the Occupation, J. A. M. A. **129**: 1225 (Dec. 22) 1945. Berlin, B. S.: Schools for Democracy, Military Government Weekly Information Bull 21, Dec. 15, 1945, pp. 10-22.

Nevertheless all of the German and Austrian medical schools, which had been closed since the invasion in April 1945, petitioned their respective military governments for permission to open, largely, as they freely admitted, so that the faculty might receive salaries, and the students receive ration cards without working in the fields or labor battalions. The students seemed to have plenty of money to pay tuition because there are no consumer goods to be purchased with their savings from war wages or army pay. The immediate German problem, just as it is in this country, was to provide postgraduate instruction for the returning medical veterans. Starting at Heidelberg on August 15 and at Marburg on September 3, 337 and 160 graduates, respectively, were given typical German teaching with lectures from 8 a. m. to 5 p. m. with two hours for lunch. The members of the German faculty were deaf to our suggestion that these ex-medical officers should be taken into the wards and into the laboratories. "Why should they? It isn't done that way here" was the stock answer we received.

The next question was How should the German medical schools be opened for regular sessions without any changes, which is what the Germans wanted, or to try to elevate the standards, which is what the Americans and British were willing to do if the Germans could be persuaded that they needed improvement? The members of the faculties of the British medical schools with whom I talked in London and Oxford en route to Germany, the American teachers of my acquaintance and I would have liked to be invited by the German medical school faculties to help install a modern program, especially the sponsorship of each German medical school in the U. S. zone by some American medical school, which probably, if invited, would rotate some of its faculty members to the German school so that modern teaching methods could be established and maintained.[7] However, among the medical teachers with whom we talked last summer only one, F. Volhard of Frankfurt, wanted to make any changes; he appreciated from his visits to this country the inferiority of German physicians and urged that the medical schools have only postgraduate courses to rehabilitate their present product rather than to create more poorly trained doctors. The other Germans paid no attention to him but went ahead with plans to produce more practitioners *en masse*. G. von Bergmann of Berlin listened while we talked about American advances in medical education but showed no interest. F. Sauerbruch did not even keep his appointment with us. While waiting in his library we found three copies of a German translation of Dr. Abraham Flexner's Medical Education, A Comparative Study, presented to him by the Rockefeller Foundation, but the pages were uncut! We left a note asking him to study the book. Karl H. Bauer's library at Heidelberg did not contain a single American or British book, yet he is supposed to teach modern surgery. When we criticized the low quality of German instruction, one of the members of the academic faculty at Heidelberg, not realizing or caring that we understood German, commented "It is odd to hear qualitative criticism from the land of mass production and record breaking figures." The German medical schools should be a warning to us not to let our pride in American medical education reach the point at which we are completely satisfied and are unwilling to try to improve it.

In spite of our pious hopes of helping the Germans improve their archaic medical instruction—a patient cannot be treated unless he realizes that he is ill—there was no alternative but to allow the Germans to work out their own problems after screening the faculties for Nazis, and to permit the universities to open without reorganization of their curriculums except for the elimination of Nazi ideology and teachers, and dangerous research activities—Heidelberg and other places had been busily engaged in atomic bomb studies. The university authorities were urged not to admit students in excess of the crowded housing conditions; if the city had been bombed there were few habitable houses and if it was intact, like Heidelberg and Marburg, it was crammed with homeless refugees from other cities. This advice, which was necessary for public health as well as for obtaining a desirable curtailment in student enrolment, went unheeded, and the regular session at Heidelberg started in November 1945 with 1,050 medical students, even though the physiology and biochemistry facilities, for example, could accommodate only 140. The equipment at Marburg was even less adequate, but 1,250 medical and dental students were admitted. Marburg has only thirty-three medical teachers and one dental instructor! With nothing but lectures, they may not need any more.

Of the other universities in the U. S. Zone of Occupation, Erlangen, Frankfurt, Munich and Würzburg are making plans for reopening later this year. The German land authorities, for financial reasons, have decided not to open Giessen. As a matter of fact, no one knows how postwar Germany can support any universities. However, those in the other zones of occupation have reopened or hope to do so in the near future under provisions similar to those in the United States area.

Medicine in prewar Austria was as bad as in Germany and for the same reasons. No postwar reformation seems likely. Hungary, on the other hand, had fairly good medical schools with reasonably sized classes and laboratory and ward teaching. No news is available on their postwar plans, but the Soviets probably have some.

In Great Britain, the variety of medical standards is responsible for the good and bad graduates—the M.B.'s from the universities of Oxford, Cambridge, London and Manchester, for example, being a different product from the L. S. A.'s. The Goodenough Report,[8] the numerous prewar Rockefeller Foundation fellowships and the eighty-six wartime medical scholarships will eventually raise British medical education to a uniformly better level. During the war the medical schools carried on fairly well, in spite of the bombing, by decentralizing the teaching to Oxford, Cambridge and other "provincial" towns. By demonstrating that a successful clinical medical school does not require a huge city and that a closer affiliation with a university is mutually advantageous, the war may have been of some benefit to British medical education. Thanks to the Nuffield Foundation and the war, Oxford now has a complete medical school, one of Osler's dreams. Before World War II most of the Oxford students went to London after they had completed their preclinical studies at Oxford. However, the Oxford academic faculty is perturbed over this invasion and is discussing its elimination.[9]

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[6] Frankfurt, Giessen, Munich and Würzburg (U. S. zone); Bonn, Düsseldorf, Hamburg, Kiel, Cologne and Münster (British zone); Freiburg and Strassburg (French zone); Berlin, Greifswald, Halle, Jena, Königsberg, Leipzig and Rostock (Russian); Breslau and Poznan (Polish). In Austria the Russians also control Vienna, the British Graz, and the French Innsbruck.

[7] One of the reasons our diplomatic relations with other countries are so bad is our Anglo-Saxon spirit of reform, being missionaries and "do gooders," carrying the white man's burdens and always attempting to pull the mote out of other nations' eyes. It may be based on conceit and on a not too unconscious feeling of superiority. At any rate we are convinced that, if a political or medical program suits us, it must be imposed on every one.

Greece, because of politics and a poor faculty, has never had a good medical school.

Italy, the birthplace or rather the renaissance of modern medicine, has lost all claim to medical respectability. Before World War II, through the eighty-eight resident and the thirty to forty foreign fellowships supported by the Rockefeller Foundation, eleven of the twenty-three Italian medical schools were beginning to improve. However, Mussolini, a great increase in students, poor faculty salaries, the war and the deterioration of equipment killed this second renaissance.

In the Netherlands the isolation of the German occupation, the disappearance of 30 per cent of the faculty of medicine through death and liquidation, and the theft of books, instruments and machinery by the Boches, forced the closing of the schools at Leyden and Utrecht and the stagnation of those of Amsterdam and Groningen. Although prewar medical education in the Netherlands was equal to any other in the world, the Dutch are striving to reform and improve it. The government has invited four American medical teachers to spend three months in Holland as visiting lecturers. A delegation also is trying to rebuild the medical libraries.

The medical schools in Norway, though not physically damaged, have stagnated, as they have been cut off from the advances in medicine since 1940 and have not been able to graduate an adequate number of physicians. The temporary conquerors also stole considerable equipment. However, contrary to Germany, Norway believes in helping herself and is supporting forty dental students at Tufts, 320 science and medical students and 75 medical graduates in Sweden, Denmark and Switzerland. The American Scandinavian Foundation is trying to place others in this country. A special effort is being made to rebuild the public health and pediatric services.

Poland is in great medical need. Before World War II the medical schools of Warsaw and Cracow were nothing to be proud of, but now they are in ruins. During the war the Poles maintained a medical school in Edinburgh, and 30 to 40 were graduated last year. However, they do not seem to desire to return to Poland.

Prewar Spain, except for the neurohistologic laboratory of Cajal and Hortega in Madrid, had no medical education worthy of the name. Portugal is in a similar situation but without memories of Cajal and Hortega.

Sweden, before the war, had excellent medical schools at Stockholm, Lund and Uppsala,[10] but it now needs contact with the outside in order to resume its former standards.

Switzerland has maintained medical leadership in central Europe for many generations. While the medical schools in France, Germany, Austria and Italy deteriorated, Switzerland with good faculties, carefully selected small classes and practical teaching has been a model which all other nations should have followed.

The Union of Soviet Socialist Republics, like the United States of America, is an enigma for those who wish to generalize. The truth of the matter is that, like our own, some medical schools and parts of some others, e. g. the brain and physics institutes, are excellent, but the remainder suffer from too little mental and physical equipment. After all, the number of graduates cannot be greatly increased as it has from 1917 to the present without reducing some quality for the sake of quantity. The Soviets have invited thirty to forty American and British scientists to visit Russia, and a smaller reverse stream is starting.

SUMMARY

European medical education is not as good as most physicians formerly thought. It has been profoundly affected by the war both from the mental restrictions of the German occupation and from actual physical destruction in Great Britain, France, Italy and Germany. It is a great opportunity for us to be of help, but, as indicated, in connection with Germany our assistance must be invited. All of the European schools need supplies, and our army and navy medical surpluses now in Europe could not be better used than as gifts to the medical schols.

Several of the countries, e. g. Belgium, France and Norway, are sending their medical teachers to Great Britain and to this country for short or long periods of postgraduate training, and many others have expressed a desire not only to come here but also to remain. However, is this the best program for the rehabilitation of medical education in the countries that desire improvement? Scholarships and fellowships are splendid for the individuals holding them, and the number coming to this country is constantly increasing.[11] However, these people do not exert a very lasting influence on the university they visit or that to which they return, in spite of Colonel McCormick's fear that the Rhodes scholarships are part of a deep British plot to anglicize this country. Much more permanent effect would result if funds could be obtained to enable members of American faculties of medicine to spend three to six months at foreign schools to which they might be invited, as in the Netherlands plan, so that modern teaching methods could be established and maintained. A far better school of nursing was founded in Haiti by sending three teachers of nursing there than by bringing nursing students to this country. Oxford has profited by the Eastman visiting professors from this country, and the Flexner visiting lecturers from abroad have benefited Vanderbilt. It is said that even Harvard students like having visiting professors of medicine from other more provincial schools in this country—perhaps as a variation from their former Christian science.

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[8] The Goodenough Report: Medical Schools in Great Britain, Nature, London **154**: 322-326 (Sept. 9) 1944. Report of the Inter-Departmental Committee on Medical Schools, Great Britain Ministry of Health, Department of Health for Scotland, London, His Majesty's Stationery Office, 1944.

[9] Allen, C. H.: Personal communication to the author.

[10] Bergland, E.: Studying Medicine in Sweden—A Comparison with Our American System, Bull. A. Am. M. Coll. **2**: 292-296 (Oct.) 1927.

[11] Griffin, A. S.: Admission of Foreign Students into the United States, Higher Educ. **2**: 1-3 (Jan. 1) 1946.

PERINEAL PROSTATECTOMY UNDER CONTINUOUS CAUDAL ANESTHESIA

EDWIN DAVIS, M.D., and L. W. LEE, M.D.
Omaha

As long ago as 1931 one of us (Davis[1]) reported a consecutive perineal prostatectomy series totaling 229 under sacral block anesthesia without an anesthesia failure and had the temerity at that time to refer in the title to the "infallibility" of this method, properly employed, for this purpose. This consecutive series, now increased to a total well in excess of 1,000, has not yet been interrupted by failure, meaning that not in a single instance has it been necessary to employ supplemental inhalation anesthesia or narcosis of any kind except the routine preoperative hypodermic of ¼ grain (0.016 Gm.) of morphine sulfate given merely with the purpose of blunting the edge of apprehension. The term sacral block, as here employed, refers to injection of anesthetic solution through the sacral hiatus (caudal anesthesia), combined with injections through the sacral foramens, thus providing added insurance of success by approaching the same nerve roots from different directions (fig. 1). According to our routine technic, followed through the years, we have employed 40 cc. of procaine hydrochloride solution 1 per cent through the caudal needle and 10, 8 and 5 cc. into the first, second and third sacral foramens respectively on each side.

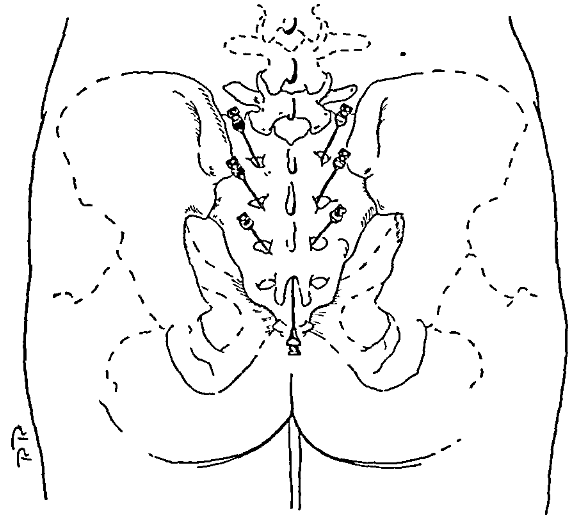

Fig 1.—Sacral block anesthesia, showing combined injection of sacral hiatus and foramens.

In view of this gratifying record, one might quite properly inquire why then attempt the continuous caudal method. There are several reasons, the first of which has to do with the skill and practice necessary for the location of the several sacral foramens, as compared with which the introduction of the needle into the caudal canal only is a comparatively simple procedure. This point is well illustrated by the published experiences of one of us,[1] whose early reports on perineal prostatectomy under sacral block anesthesia included no less than five anesthesia failures in the first twenty-five attempts, four in the second twenty-five, two in the third twenty-five, one in the fourth twenty-five and only one in the second hundred. The point which we make is that the dwindling percentage of failure is proof of the important role played by practice. All other factors having remained constant, this almost incredible improvement could have been due only to greater accuracy in the placing of the needles. From the point of view of the patient, the obvious advantage of the continuous caudal method lies in the difference between one needle and seven. There is also the time element, in that published figures[1] indicate an average period of eleven minutes necessary for the administration of sacral block anesthesia, with a maximum of thirty minutes and a minimum of four.

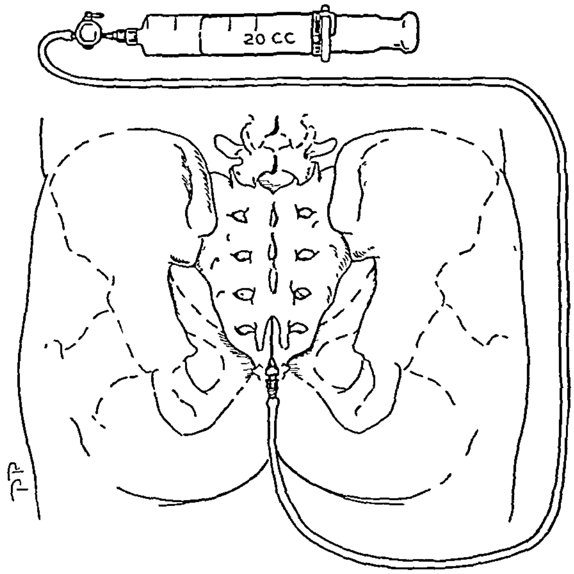

Fig 2.—Apparatus required for continuous caudal anesthesia.

Our chief justification however for investigating the possibilities of continuous caudal anesthesia in the perineal field was that this technic seemed to offer a simple and safe method of anesthesia of unlimited duration, permitting the operator to substitute deliberateness for haste, and applicable not only in cases of difficult perineal prostatectomy but also in such procedures as perineal fistulectomy, repair of urethrorectal fistula and Young's complete radical excision of early prostate carcinoma.

The principle of continuous anesthesia by intermittent administration during the operative procedure was introduced in 1940 by Lemmon[2] as continuous spinal anesthesia. Edwards and Hingson[3] in 1942 applied the principle of intermittent administration of the anesthetic agent through a caudal needle in obstetric cases with satisfactory results. The technic that we have employed in perineal surgery is essentially similar to the technic of Edwards and Hingson.

TECHNIC

With the patient in the prone position, a 3 inch malleable steel spinal needle, number 19, as described by Lemmon, is introduced into the caudal canal after infiltration of the skin and subcutaneous tissues through a fine hypodermic needle. Whereas, after years of satisfaction with a stiff needle, we had anticipated difficulty with the malleable needle, the contrary proved to be true, because of the tendency of the malleable needle to adapt itself to the normal curve of the sacral canal. Full advantage may be taken of the malleable

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From the urologic departments of the Bishop Clarkson Memorial Hospital and the Hospital of the University of Nebraska College of Medicine.

[1] Davis, Edwin: Sacral Block Anesthesia in Perineal Prostatectomy, J. A. M. A. **97**: 1771-1775 (Dec. 12) 1931.

[2] Lemmon, William T.: A Method of Continuous Spinal Anesthesia, Ann. Surg. **111**: 141-144 (Jan.) 1940.

[3] Edwards, W. B., and Hingson, R. A.: Continuous Caudal Anesthesia in Obstetrics, Am J. Surg. **57**: 459-464 (Sept.) 1942.

quality of the needle by combining the forward thrust with a slow twisting motion, thus causing the bevel to act as a sled runner and minimizing interference by the floor or the roof of the canal. Following attempted aspiration, to exclude the possibility of venipuncture, and the exceedingly remote possibility of spinal tapping, procaine hydrochloride solution 1 per cent, in the amount of 80 cc. is slowly injected. This amount was arbitrarily decided on because it was found to be adequate and harmless. It is not unlikely that a smaller initial injection would suffice. The patient is then placed on the operating table in the exaggerated lithotomy position. During this manipulation not more than ordinary care is necessary to avoid disturbing the caudal needle, which is then connected to a 20 cc. Luer-lok syringe by means of a 3 foot length of fine rubber tubing (fig. 2). Although the lapse of time during placing and draping of the patient is ordinarily sufficient for the development of anesthesia, the infallible criterion as to the timing of the incision is relaxation of the sphincter ani. Throughout the operative procedure, procaine hydrochloride solution 1 per cent in 10 cc. amounts is then injected at fifteen minute intervals. This formula also was arbitrarily determined on and may be modified in the individual case as necessary and as determined by the judgment of the anesthetist. In not a few instances the initial 80 cc. injection was found to be adequate for the entire procedure. Figure 3, being a photograph of an anatomic dissection, shows precisely the relationship of the dural sac, nerve roots and caudal needle within the sacral canal.

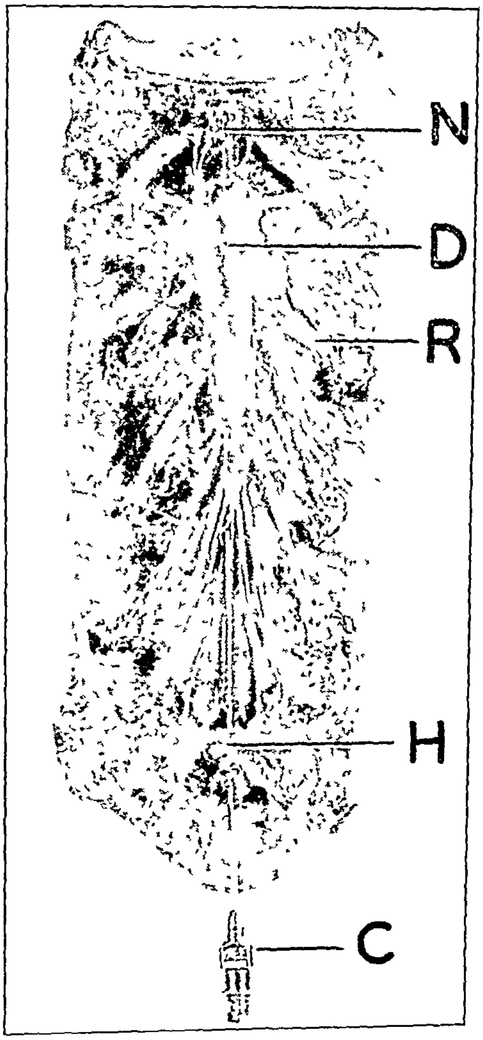

Fig. 3.—Anatomic dissection with entire dorsal surface of sacrum removed, exposing dural sac and nerve roots as they traverse the bony sacral canal: *D*, dural sac, terminating at level of second sacral segment; *N*, nerve fibers within dural sac (cauda equina), *R*, first sacral nerve root; *H*, sacral hiatus; *C*, caudal needle. The small black dots visible around the nerve roots represent cross sections of vessels traversing the sacral foramens. These are not infrequently tapped during the administration of sacral block anesthesia, necessitating replacing of the needles.

RESULTS

This method has given uniformly satisfactory results in 36 consecutive cases without mishap or unfavorable sequelae of any kind. In no instance has supplementary inhalation anesthesia or any supporting measure been necessary. Any complaint, or even any comment at all on the part of the patient during the operation, has been the exception and has been with respect to discomfort incident to the position on the table and wholly unrelated to the operative manipulation. There was no instance of a serious drop in blood pressure. Anesthesia was maintained in this series in a range from fifty to one hundred and fifty minutes with total dosages varying from 80 to 150 cc. of 1 per cent procaine hydrochloride. Drug reactions, characterized by a drop in blood pressure, slow pulse, pallor, perspiration and sometimes a transient loss of consciousness, have never been of serious consequence and may be reduced to minimum frequency by extreme care in avoiding venipuncture. Such reactions may be controlled by the intravenous administration of 50 mg. of ephedrine.

The continuous caudal method has as its obvious advantages its relative simplicity from the point of view of both surgeon and patient as well as the elimination of the need for haste in any unusually prolonged perineal procedure, whether prostatectomy or fistulectomy. In addition to the easily avoided hazard of intravenous injection and the negligible hazard of intradural injection, the only disadvantage which occurs to us is that success is wholly dependent on the accurate placing of one needle only, whereas with the complete sacral block each nerve trunk is bathed in anesthetic solution injected from two or more directions. Our consecutive series of 36 patients without failure, however, would indicate that with reasonable skill the danger of failure properly to introduce the needle is negligible. In spite of the recognized tremendous variation in the bony structure of sacra, so well depicted by multiple illustrations in Lull and Hingson's[4] recent treatise on this subject, the skilled operator almost never fails to introduce the needle into the canal. These results, in seeming contradiction of the opinion formerly "widely prevalent that sacral block anesthesia has a certain inevitable proportion of failure,"[1] averaging about 15 per cent in different hands, may be explained by the larger quantities of solution now employed. We know of no factors determining success or failure, other than proper placing of the needle and the quantity of solution, these being the only variables.

CONCLUSIONS

Uniformly satisfactory results, with complete anesthesia and without toxic manifestations, in a series totaling 36 consecutive cases, justify the conclusion that continuous caudal anesthesia in perineal prostatectomy is feasible and might well supplant other methods. The continuous caudal method is applicable in other perineal operations in addition to prostatectomy.

1436 Medical Arts Building.

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[4] Lull, C. B., and Hingson, R. A.: Control of Pain in Childbirth, ed. 2, Philadelphia, J. B. Lippincott Company, 1945, pp. 18-22.

SELECTION OF HYPERTENSIVE PATIENTS FOR SYMPATHECTOMY

HENRY I. RUSSEK, M.D.
JAMES L. SOUTHWORTH, M.D.
Staten Island, N. Y.
and
BURTON L. ZOHMAN, M.D.
Brooklyn

The demonstration that surgical sympathectomy may favorably influence the course of essential hypertension in man has given emphasis to the role of the autonomic nervous system in the pathogenesis of this disease. Indeed there is much to indicate that (1) neurogenic vasoconstriction is of prime importance in human hypertension and that (2) renal ischemia is a secondary rather than a fundamental phenomenon in its mediation.

Obviously, sympathectomy can be successful only in those instances in which vasospasm is due wholly or in large part to neurogenic influences. As there has been no method by which autonomic activity could be accurately quantified in man, selection of patients for surgery has proved difficult. A test that could determine the presence and degree of participation of a neurogenic element would be valuable. The sodium amytal, sodium nitrite and cold pressor tests, although still widely used, have given ample demonstration of their inability to fulfil this need.[1] High spinal anesthesia[2] appears to yield some information regarding sympathetic participation in hyperpiesia but in our experience introduces factors greatly interfering with proper interpretation of the results. Thus, the loss of muscle tone and complete motor paralysis observed in the lower part of the body in spinal anesthesia may, of themselves, materially affect the height of the blood pressure through the medium of venous stasis, diminished venous return to the heart and fall in cardiac output. In this connection the fundamental role of tonic tissue pressure in determining venous return needs no further emphasis. The alteration in respiration, which becomes entirely diaphragmatic under high spinal anesthesia, further diminishes the return flow to the thorax as a result of a less efficient respiratory "pumping" action. Consequently the hemodynamic response to this procedure does not seem comparable to that following surgical sympathectomy.

In a previous report we[3] described the use of continuous caudal anesthesia as a means of selecting hypertensive patients for surgery. The results in a small series of cases raised the hope that this procedure might eliminate guesswork in making such selection. The following appear to be among the advantages of continuous caudal anesthesia over high spinal anesthesia as a test of sympathetic activity:

1. Muscle tone and motor power in the lower extremities are little affected.
2. Respiration is essentially unchanged.

In view of 1 and 2 a closer approximation to the status after surgical sympathectomy is established.

3. The height of anesthesia is easily and safely raised to the desired level by repeated small injections.
4. The height of anesthesia is readily controlled and may be maintained without danger for hours, permitting performance of other tests at lower blood pressure levels.
5. By gradual and progressive block of sympathetic nerve segments from below upward, correlated with blood pressure readings, a clear concept may be obtained not only with regard to the degree of neurogenic influence but also with respect to the extent of surgery indicated in the given case.
6. Tilting of the patient with feet elevated and head low, in order to minimize venous stasis, may be safely undertaken without danger of depressing medullary centers. In caudal anesthesia the anesthetic agent is extradural and cannot rise above the foramen magnum around which the dura is attached.
7. Nausea, vomiting and toxic symptoms are rare. In 60 cases of essential hypertension in which this test was given we have not encountered a single instance of shock or other serious reaction.
8. The patient appears more comfortable and less apprehensive than when under spinal anesthesia. He can be transported easily and does not require observation after the procedure.
9. The patient may be up and around within a few hours after the test and "spinal headaches" are not subsequently encountered.

TECHNIC OF THE TEST

The patient is placed in a quiet room, and blood pressure readings are taken every fifteen minutes for a period of one hour. Continuous caudal anesthesia[4] employing the technic of high caudal block[5] was used in most instances. After insertion of the needle into the sacral canal a trial dose of 8 cc. of metycaine 1.5 per cent is injected. With no loss of sensation to pin prick or loss of motor power in the lower extremities in ten minutes, it can be safely assumed that the subarachnoid space has not been entered. Thirty cc. of the 1.5 per cent solution is then slowly injected. A progressive loss of painful sensations as caused by pin prick in regions supplied by the coccygeal, hemorrhoidal, perineal, pudendal, ilioinguinal and iliohypogastric nerves ensues. Vasodilatation with flushing of the soles of the feet, cessation of sweating and increase in skin temperature of the feet follows within five to fifteen minutes after injection. The patient is then placed comfortably on his back and 30 cc. of the anesthetic agent is again injected within five to ten minutes after the previous injection. This dosage often suffices to cause a gradual rise in the level of skin anesthesia to the sixth thoracic segment within twenty to thirty minutes (determined by pin prick). In many cases, however, one or two additional injections of 30 to 50 cc. at twenty to thirty minute intervals are required to establish the desired level of anesthesia. Throughout the procedure the latter is determined and recorded every five to ten minutes together with associated blood pressure readings. Subsequent injections of 20 to 30 cc. of metycaine may be employed at variable intervals if it is desired to perform other tests at the lower blood pressure levels. The patient may be tilted at any time with the feet elevated in order to determine the influence of venous stasis on blood pressure.

In a few cases it was found impracticable to raise the level of anesthesia to effective heights by the caudal method. For these we have used continuous peridural anesthesia.[6] Fundamentally this method is the same

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Dr. Homer L. Skinner performed the surgical operations.

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From the Cardiovascular Research Division and Surgical Service, U. S. Marine Hospital, Staten Island, N. Y.

[1] Page, I. H., and Corcoran, A. C.: Arterial Hypertension: Its Diagnosis and Treatment, Chicago, Year Book Publishers, 1945, p. 336. Grimson, K. S.; Kernodle, C. E., Jr., and Hill, H. C.: Hypertension, J. A. M. A. **126**: 218-221 (Sept. 23) 1944. Fishberg, A. M.: Hypertensive Cardiovascular Disease, New York Med. **1**: 17 (Sept. 20) 1945.

[2] Page, I. H.; Taylor, R. D.; Corcoran, A. C., and Mueller, L.: Correlation of Clinical Types with Renal Function in Arterial Hypertension: II. Effect of Spinal Anesthesia, J. A. M. A. **121**: 736-737 (March 11) 1944.

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[5] Southworth, J. L., and Hingson, R. A.: Continuous Caudal *Analgesia in Surgery*, Ann. Surg. **118**: 945-970, 1943.

[6] Hingson, R. A., and Southworth, J. L.: Continuous Peridural Anesthesia, Anesth. & Analg. **23**: 215-217, 1944.

as caudal anesthesia, the drug solution causing its effects in the same location and manner. The needle is inserted in the upper lumbar region, however, and by this technic diffusion to the thoracic nerves is more readily obtained.

RESULTS OF TEST

Lowering of the blood pressure to normal levels (140/90 or less) occurred in 32 of 60 hypertensive patients when the level of anesthesia was at the sixth thoracic segment or below. In 8 of these 32 patients normal levels were attained with anesthesia only as high as the tenth thoracic segment. In 18 patients of the entire series there was a moderate fall in blood pressure to levels above 140/90 but considerably below the original resting pressures. Elevation of anesthesia to the fourth thoracic segment brought the blood pressure down to normal levels in 10 of these 18 subjects. Consequently restoration to normal blood pressure was accomplished in 42 of 60 patients by levels of anesthesia varying from the tenth to the fourth thoracic segments. Of the entire series 10 patients showed slight or no response to the test. It is conceivable, therefore, that the reaction of the blood pressure to continuous caudal anesthesia not only may establish the existence of a neurogenic element but may actually suggest the extent of sympathetic denervation necessary to achieve a satisfactory result.

Results of Studies

		Blood Pressure *						
Case	Age	Resting Level	Sodium Amytal	Sodium Nitrite	Pentothal Sodium	Caudal Test	Post-operative	Comment
1	44	200/130	.. ....	140/100	190/125	140/ 90	136/ 90	Grade 3 eyegrounds; normal cardiac and renal functions
2	42	230/126	....	190/110	170/120	140/100	150/ 94	Grade 2 eyegrounds; normal cardiac and renal functions
3	21	200/140	....	170/118	130/102	160/125	180/130	Grade 4 eyegrounds; early congestive heart failure; poor kidney function
4	36	180/130	....	160/114	162/130	90/ 70	96/ 62	Grade 1 eyegrounds; normal cardiac and renal functions
5	48	180/110	130/ 90	... ...	. .. ..	176/110	184/108	Grade 1 eyegrounds; normal cardiac and renal functions
6	45	210/130	.. ...	. . ...	180/124	136/ 86	140/ 92	Grade 2 eyegrounds; normal cardiac and renal functions
7	47	220/140	164/100	180/126	.... .	120/ 84	126/ 90	Grade 2 eyegrounds; normal cardiac and renal functions
8	41	226/160	190/142	178/130	. ..	140/100	150/110	Grade 3 eyegrounds; normal cardiac function; decreased renal function
9	39	220/148	180/124	186/130	..... .	150/ 95	220/140	Grade 1 eyegrounds; normal cardiac and renal functions
10	50	240/140	164/110	200/118	..... .	152/100	146/ 98	Grade 2 eyegrounds; normal cardiac and renal functions
11	34	160/112	140/ 96	130/ 88	.. ..	120/ 80	124/ 88	Grade 1 eyegrounds; normal cardiac and renal functions
12	47	200/136	142/ 90	150/124	... ...	130/ 90	142/ 96	Grade 2 eyegrounds; normal cardiac and renal functions

* All pressures were measured with the patient lying down.

To date we have followed the course of 12 patients who were operated on for hypertensive disease. In all cases the procedure advocated by Smithwick[7] was performed. Ten of the 12 patients showed a favorable response to the caudal test and 9 of these responded to surgery in similar manner. The tenth (case 9) has continued to show hypertension in the recumbent position but only mild elevation of the blood pressure on assuming the erect posture. Two patients showing poor response to the caudal test were operated on and in both instances surgery failed to improve their status. From the accompanying table it can be seen that the sodium amytal, sodium nitrite and pentothal sodium tests were unreliable in forecasting the outcome of surgery.

Case 8 is of special interest because only the caudal test suggested possible benefit from sympathectomy. Operation was performed in two stages but the lumbar sympathetic ganglions on one side were not found. The blood pressure remained elevated and persisted around 174/140 in the recumbent position, the original level having been 226/160. The caudal test was repeated and the blood pressure was again found to be considerably influenced by it. The patient was operated on again and this time the lumbar sympathetic ganglions were found and resected. The blood pressure subsequently fell to 150/110 in the recumbent position and has persisted at this level.

Case 9 failed to respond to surgery as favorably as was predicted by caudal anesthesia. The blood pressure in the recumbent position was 220/140 but fell to 156/108 on standing. The caudal test was repeated in this case and it was found that the blood pressure remained relatively unchanged until high levels of anesthesia were reached (eighth thoracic to fourth thoracic). This was in distinct contrast with the findings in the preoperative test. It seemed, therefore, that while denervation appeared complete at the lower levels a more extensive sympathectomy might have improved the results. The difference between the preoperative caudal test and the result following sympathectomy may be explained by the fact that in the latter the thoracic ganglions only as high as the ninth segment were resected, while in the caudal test functional denervation as high as the sixth thoracic segment was achieved and used as a basis for prognostication. In an appreciable number of cases under caudal anesthesia we have noted a definite decrease in blood pressure with only slight increase in the extent of denervation.

The large variation in the response of hypertensive patients to continuous caudal anesthesia may conceivably form the basis for decision as to the extent of surgery indicated in a given case. Thus the patient whose blood pressure is reduced to normal with anesthesia only as high as the tenth thoracic segment may merely require supradiaphragmatic resection of the splanchnic nerves (Peet[8]) or infradiaphragmatic resection (Craig and Adson[9]) or one of the other less extensive procedures to achieve a satisfactory result. Patients requiring levels of anesthesia as high as

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[7] Smithwick, R. H.: A Technic for Splanchnic Resection for Hypertension: Preliminary Report, Surgery 7: 1-8, 1940.

[8] Peet, M. M.: Splanchnic Section for Hypertension: Preliminary Report, Univ. Hosp. Bull., Ann Arbor 1: 17-18, 1935.

[9] Craig, W. M., and Adson, A. W.: Hypertension and Subdiaphragmatic Sympathetic Denervation, S. Clin North America 19: 969-980, 1939

the sixth thoracic segment for favorable response of the blood pressure may be the candidates requiring the Smithwick type of resection.[7] Finally we have observed a group of patients who, under caudal anesthesia, show progressive but slow decline in blood pressure so that satisfactory readings are not obtained until the level of skin anesthesia reaches the fourth or even the second thoracic segment. It is possible that these patients can be aided only by total sympathectomy (Grimson[10]). The differences in response to caudal anesthesia may well explain the lack of uniformity in the reported results of various surgical technics.

The use of continuous caudal anesthesia demonstrates that a safe and reliable means exists of producing functional block of the sympathetic nervous system. The method offers a challenge to research for the discovery of a sympatholytic drug capable of prolonged effect, which may render surgery unnecessary.

SUMMARY AND CONCLUSIONS

Continuous caudal anesthesia reduced the blood pressure to normal in 42 of 60 hypertensive patients given this test. Eight patients showed a moderate fall of blood pressure but remained hypertensive even at relatively high levels of anesthesia. Ten patients showed slight or no response to the test.

Observations of the response of the blood pressure to continuous caudal anesthesia were used to predict the outcome of surgical sympathectomy in 12 hypertensive patients. The results were accurately forecast in 11 of the 12 instances. Other tests were found unreliable when employed for this purpose.

Continuous caudal anesthesia may be of value in the selection of hypertensive patients for sympathectomy and in dictating the extent of surgery necessary for a successful result in individual cases

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THE CLINICAL USE OF ORAL BASAL TEMPERATURES

M. EDWARD DAVIS, M.D.
Chicago

Tompkins[1] in 1944 called attention to the value of basal temperatures for the determination of the time of ovulation. He reviewed the literature briefly and emphasized the fact that little clinical use has been made of this important physiologic phenomenon in the interpretation of the events in the normal ovarian cycle. His most important contribution was the designing of a practical temperature graph for the use of the patient and providing explicit directions so that the graph could be filled out readily and accurately. The introduction of this graph has increased the interest of the profession in this practical method of studying ovarian changes.

During the past two years we[2] have collected basal temperature graphs in over 500 patients. This study has been correlated with a study of vaginal smears, endometrial biopsies and operative material whenever it was available. Many interesting observations have been made and, like Tompkins, I have been impressed with the simplicity of a diagnostic method which can yield a tremendous amount of information. This short report has a twofold purpose: (1) to point out again the value of basal temperatures in the clinical interpretation of ovarian physiology and (2) to urge the substitution of oral temperatures in place of the objectionable rectal and vaginal temperatures in use at the present time.

Body temperature variations in healthy persons, young and old, have been known for many years. It is a sensitive barometer of physical as well as mental activity, metabolic activity and other physiologic functions. Muscular work, food taking, mental excitement and extraneous stimuli all tend to raise the level of temperature of the healthy person. Typical curves have been set up demonstrating the fluctuations in body temperature during the twenty-four hour period under varying environmental conditions. They follow a diurnal pattern because days are devoted to activity and nights to rest. Kleitman and his co-workers[3] spent a week in a subterranean cave devoid of outdoor light and proved that day and night could be eliminated as factors influencing body temperature, for the curve could be altered by changing the period of rest and activity.

In the healthy male there is no variation in the daily pattern other than that induced by the foregoing factors. In the female ovarian activity alters this daily basic curve. Follicle rupture and corpus luteum development raise the level of the basal temperatures during the latter half of the cycle. The relationship of ovarian activity and body temperature has been demonstrated by a number of authors. Rubenstein[4] in 1939 initiated an extensive study to correlate these physiologic phenomena.

Kleitman[5] has pointed out that in his extensive studies of body temperature the pattern of the curve obtained by oral recordings was similar to that obtained by rectal recordings. Oral temperatures are about 1 degree Fahrenheit lower than rectal temperatures. In his experience the morning basal temperature obtained orally is more accurate than recordings at any other time of the day, for no liquids or food have been consumed for many hours. Furthermore, a curve constructed from a single daily recording provides reliable information for clinical interpretation. Additional temperature readings may be of some help in noting the temperature drop preceding the ovulatory rise.

I have replaced my own graph with the Tompkins chart since its introduction. Oral temperatures are recorded rather than rectal temperatures or vaginal temperatures as suggested by some investigators. Although oral temperatures are somewhat lower than rectal temperatures, the basic pattern of the curve remains the same. I have found that women do not like the idea of taking rectal temperatures because it is inconvenient and unesthetic. It is simple to place the thermometer in one's mouth immediately on awakening. This simple procedure involves little or no activity.

The thermometers on the market are designed in such a way that they are difficult to read. Recently a thermometer has been introduced by the Taylor Instrument Company in which the mercury column is visible readily. We have spent some time with each patient instructing her in reading the thermometer and in explaining to her the purpose of the basal temperatures and their proper recording. She is urged to place the thermometer in her mouth immediately on awakening before she resorts to any activity. It is helpful to have the patient bring the graph at the end of a month so that it can be inspected to make certain that it is being kept properly.

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[10] Grimson, K. S. Total Thoracic and Partial to Total Lumbar Sympathectomy and Celiac Ganglionectomy in Treatment of Hypertension, Ann Surg **114:** 753 775, 1941

From the Department of Obstetrics and Gynecology, the University of Chicago, and the Chicago Lying In Hospital

[1] Tompkins, Pendleton Use of Basal Temperature Graphs in Determining Date of Ovulation, J. A. M. A. **124:** 698 (March 11) 1944.

[2] Mrs. Patricia Voskuil rendered valuable assistance in this study.

[3] Kleitman, N ; Titelbaum, S , and Feiveson, P.: Am J Physiol **121:** 495 (Feb.) 1938

[4] Rubenstein, Boris B Ohio State M. J. **35:** 1066 (Oct.) 1939, Endocrinology **27:** 843 (Dec.) 1940

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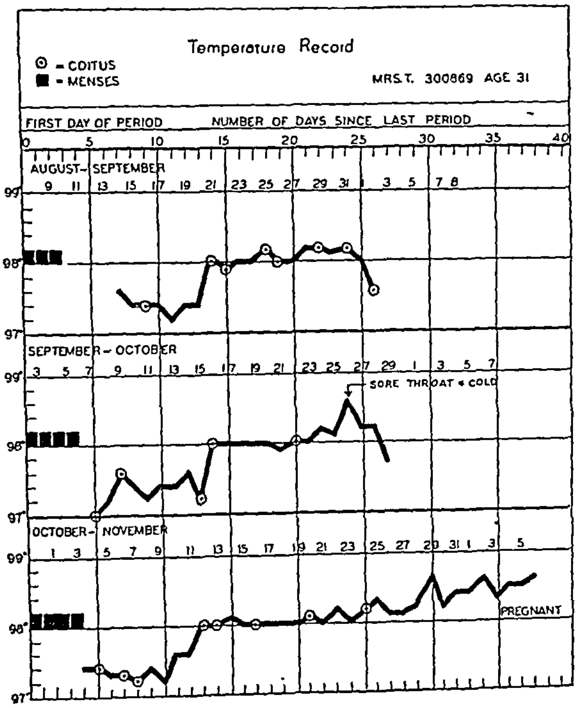

Chart 1.—This patient menstruates every twenty-six to twenty-nine days for three or four days. The drop in temperature from the preovulatory basal level occurred on days eleven, fifteen and ten. When coitus occurred at the time of the drop in September, no pregnancy resulted. However, when it took place at the peak of the rise, conception followed. Note the drop in temperature thirty-six hours prior to the onset of bleeding.

The more careful the record is maintained, the more valuable are the data to the physician.

The patient is asked to indicate on the graph the menstrual days, any unusual occurrence, illness, coitus and special medication (endocrine patients). Basal temperatures are significant if the daily routine of the patient does not vary considerably. A patient who arises at widely varying hours is likely to have an irregular basal curve which may provide little information. A single reading on arising in the morning provides all the information needed.

Basal temperatures are reliable indexes of ovarian activity in at least three out of four women. In the remaining one the curve is so atypical with irregular readings at intervals that no accurate interpretation of physiologic changes can be made. In the group of women with typical curves an accurate correlation between basal temperatures and physiologic changes can be made.

THE TYPICAL BASAL CURVES

The temperature drops twenty-four to thirty-six hours before the onset of bleeding, reaching a low level during the first day or two after the onset of the menses. This low level continues during the entire menstrual phase and to the midinterval, when ovulation occurs usually in the woman who has a twenty-seven to thirty-one day cycle. Typically there is a further sharp drop in the temperature from the base line just prior to the ovulatory rise, although this drop may not be apparent. The temperature rises abruptly during the next twenty-four to thirty-six hours, reaching a plateau, where it remains until twenty-four to forty-eight hours before the onset of bleeding in the following period. The rise is a clearcut phenomenon and the temperature curve after the rise is in sharp contrast to that preceding it (chart 1).

It has been assumed that the drop prior to the rise signifies ovulation and that this point would represent the most fertile period in the cycle. The majority of the pregnancies followed coitus during the period of temperature rise following this drop and immediately after it has reached its upper plateau. Clinically, it is difficult to interpret the preovulatory drop in temperature but it is relatively easy to note the ovulatory rise. It is my impression that the rise is brought about by ovulation and that the elevated basal temperatures are maintained by the corpus luteum activity. Persistence of the elevated temperature during pregnancy would add weight to this interpretation. I am attempting to reproduce normal basal temperature curves in young castrates by endocrine substitution. These experiments may add some information.

When pregnancy occurs, the basal temperature remains at the postovulatory level during the first few months of the gestation (charts 1 and 2). At this time a drop occurs in most patients, but it does not return to the preovulatory level until the end of gestation. In the postpartum period there is little variation in temperature until ovulation has been resumed. Basal temperature curves indicate that the first bleeding period is rarely ovulatory in character and that the second menstrual period is associated with ovulation in approximately half of the patients (chart 3). This confirms the observations which my associates and I made previously in a group of women in whom endometrial biopsies were obtained at every bleeding period for as long as a year. These studies revealed this typical pattern for the resumption of ovulation following parturition.

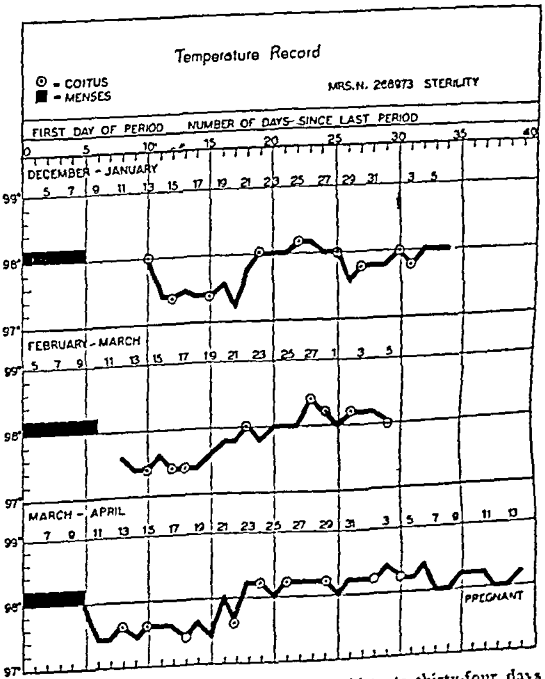

Chart 2.—This patient menstruates every thirty to thirty-four days for five or six days. Conception could have occurred when the temperature was rising or within twenty-four hours after it had reached a peak. In this graph, as well as in chart 1, note the persistence of the postovulatory level after conception.

STERILITY STUDIES

A basal temperature curve should be a part of every sterility study. It is the simplest device for ascertaining ovarian activity and dating ovulation. Other methods to determine whether a cycle is ovulatory are more difficult and do not provide as much information. Endometrial biopsies are usually taken at the onset of the menses and provide information concerning the preceding cycle. They are time consuming and cannot be repeated indefinitely. Pregnandiol determinations provide indirect information concerning ovarian activity, but they are laborious procedures. Basal temperatures indicate ovulatory cycles and the time of ovulation within a twenty-four to forty-eight hour period.

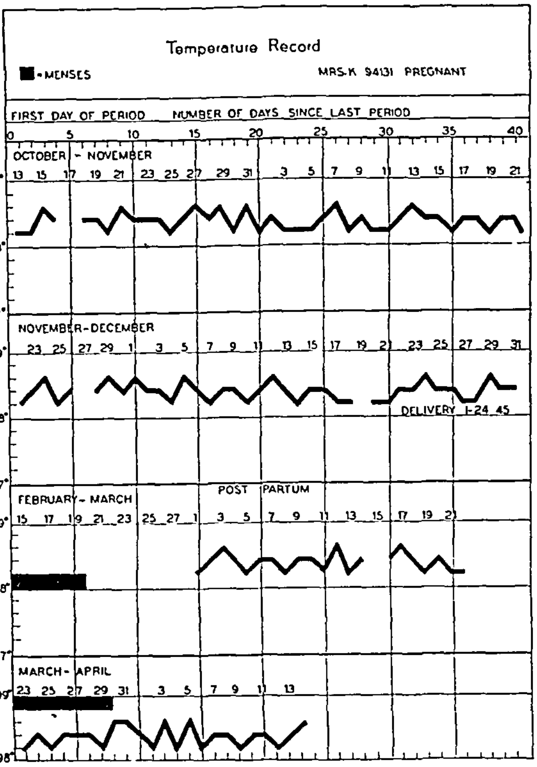

Chart 3—A temperature record during the last three months of a normal gestation and during the first two menstrual periods following delivery. The patient delivered on Jan 24, 1945 Her first bleeding period occurred from February 15 to 20 and it was anovulatory in character, as revealed by the temperature curve and an endometrial biopsy at the time of bleeding The second menses lasted eight days from March 23 to 30 It was likewise anovulatory. The third period occurred thirty days later and was preceded by a typical ovulatory temperature curve Biopsy of the endometrium at the onset of bleeding revealed a progestational phase

Patients can be instructed to have coitus as the temperature drops preceding the ovulatory rise, as it rises, and when it has first reached its postovulatory peak. This has been possible in at least 75 per cent of our patients. Assuming that the life of the ovum is very short, certainly less than twenty-four hours, and the spermatozoa retain their fertilizing power for about twenty-four to thirty-six hours, it is possible to provide spermatozoa at the proper time in most instances. This must necessarily increase the likelihood of conception and this fact has been borne out in our experience. In some instances we have learned from the record that coitus has taken place at too frequent intervals, thereby decreasing the fertility of the male (chart 4). On several occasions conception followed promptly the restriction of intercourse to that period when ovulation was indicated by the rise in basal temperature. Excessive sexual activity is of particular importance in couples of low fertility as a result of a low sperm count in the male or some other factor. Thus, our basal temperature records have provided us with much pertinent information concerning the sexual life of our sterile couples.

DIAGNOSIS OF EARLY PREGNANCY

The persistence of the postovulatory elevated temperature in the event of conception constitutes the most accurate early data concerning a pregnancy. During the first week of the missed menstrual period the failure of the temperature to drop provides reliable information concerning a possible pregnancy. This information may be of value in patients who have had abortions early in pregnancy so that therapy may be instituted when it is most likely to be effective and a regimen to safeguard the pregnancy instituted. The patient in whom the periods vary in length considerably will provide less information by the temperature curves.

AS AN AID IN PREVENTING PREGNANCY

A basal temperature record can be used to determine the fertile period in women who do not wish to use contraceptive aids. It is a more accurate method of determining ovulation than arbitrarily dating it fourteen days from the next expected menstrual period. The woman is asked to refrain from coitus from the preovulatory drop in temperature until thirty-six to forty-eight hours after the ovulatory rise has reached a plateau. In the woman with a typical curve the fertile period can be narrowed down to three days or less. The woman who has an atypical curve can refrain from coitus from day nine or ten until forty-eight hours after the rise has reached the postovulatory plateau. This will increase the length of the period of sexual abstinence but it will decrease the hazard of a possible

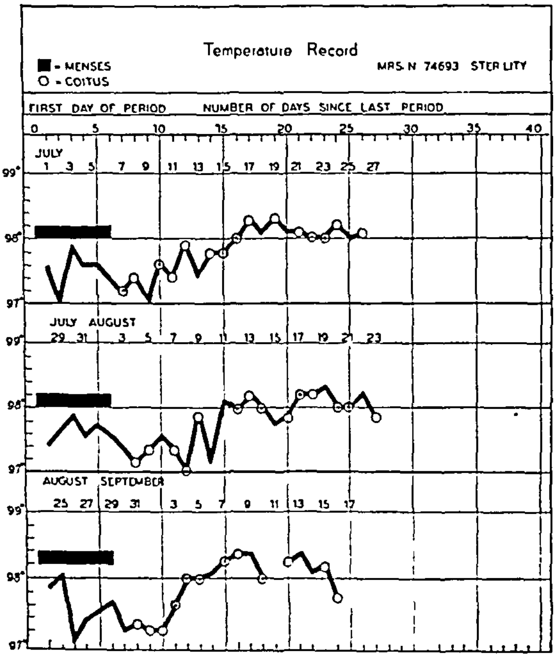

Chart 4—A sterility patient who had typical temperature curves indicating regular ovulatory cycles every twenty five to twenty seven days The husband had a low spermatozoa count but was otherwise normal The frequency of coitus was noted in the record and was due to the great desire of the couple for a baby When coitus was restricted to the period of ovulatory rise in temperature the patient conceived the following month.

pregnancy. A group of women have followed these simple instructions during the past year and have had no difficulty thus far.

IN THE MENOPAUSAL PERIOD

Many women are concerned about the possibility of a pregnancy in the menopausal period. Menstruation becomes irregular and the normal pattern disappears. More and more of these menstrual cycles are anovulatory in character. Eventually sporadic ovulations likewise disappear.

A group of women have followed their basal temperatures during the period of the climacteric. It soon became apparent to them that fewer and fewer periods were associated with ovulation. Obviously there is no danger of conception in the absence of ovulation. When bleeding ceases entirely the curve assumes the typical diurnal pattern seen in the male, for ovarian activity is at a low ebb.

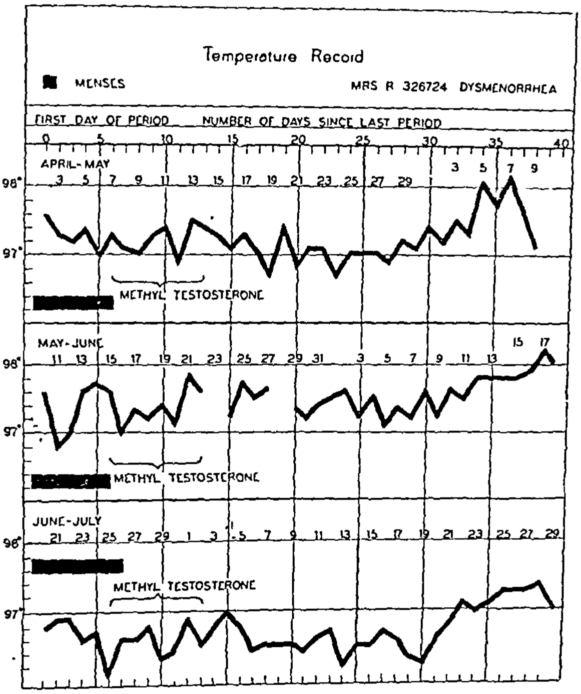

Chart 5.—The effect of methyl testosterone administered orally can be seen in this temperature record. The normal menstrual pattern of twenty-seven to thirty-one days has been disturbed. Ovulation has been suppressed and the cycles have been lengthened. The effects of various endocrine preparations can be studied more intelligently by the use of basal temperatures.

IN THE PATIENT WITH AN ENDOCRINE PROBLEM

All gynecologic endocrine studies should include a record of basal temperatures. The frequency of the menstrual periods, their length and character can be noted in the graph. Ovulatory cycles can be differentiated from anovulatory ones. Such information should not replace other data obtained by a careful endocrine study, but it will help in the diagnosis and management of the patient.

The effect of medication on ovarian activity and menstruation can be followed. The following examples from our studies can be cited: Patients with complete ovarian failure have a typical diurnal temperature pattern seen in the male. The various gonadotropins have not influenced the character of the curve. Chart 5 is the record of a patient with severe dysmenorrhea treated by methyl testosterone administered orally. It will be noted that the preparation altered the regular twenty-seven to thirty-one day ovulatory cycles and induced irregular cycles lasting much longer. Ovulation is suppressed and the postovulatory rise did not occur. The relief of the dysmenorrhea in this instance was the result of an inhibition of ovulation, as is often the case. The cessation of medication resulted in a prompt return of normal ovarian function and a typical ovulatory temperature curve.

CONCLUSIONS

An accurate graphic record of morning basal temperatures taken orally will provide pertinent data concerning ovarian activity and ovulation. Such a record should become part of all gynecologic endocrine studies, sterility investigations and in any other case in which information concerning ovarian activity is important. Temperature curves can be used as contraceptive aids. More widespread clinical use of the physiologic phenomenon of body temperature changes should be made by physicians.

Clinical Notes, Suggestions and New Instruments

MYCOTIC MENINGITIS DUE TO CANDIDA

BÉLA HALPERT, M.D.
and
HARRY WILKINS, M.D.
Oklahoma City

The clinical history and necropsy findings are presented of a patient who died with central nervous system involvement of an obscure nature. At necropsy the appearance of the lesion suggested tuberculous meningitis. However, microscopic examination revealed the presence of, and the reaction to, a fungus of the genus Candida, probably Candida albicans. The case is presented because Candida is a rare cause of meningitis. Smith and Sano[1] and Miale[2] have reported instances of meningeal involvement by Candida albicans. This however is the first case in which localization occurred in the central nervous system only.

REPORT OF CASE

L. J., a Negro aged 25, was first seen at the University Hospitals on Sept. 1, 1941, when he complained of headache of eleven months' duration. The pain was bitemporal with the sensation of the eyes "drawing." Four months prior to admission his neck became painful and diplopia developed. Two weeks before admission these symptoms became more severe, his vision tended to decrease and tinnitus occurred. On admission he was stuporous but could easily be aroused. Gross paresis was absent, nuchal rigidity was present and Kernig's sign was positive bilaterally. The pupils were unequal, with the left larger than the right. There was paralysis of the left abducens nerve. Lateral nystagmus was noted when the eyes turned to the left. Papilledema was evident bilaterally. Visual fields were of normal outline. Cutaneous and deep sensations were undisturbed and the motor pathways were intact. The tendon reflexes were decreased to absent, and Babinski's sign was negative. There was slight incoordination in the finger to nose test on the left. The pulse rate was 76 and the blood pressure 108/68. Other physical findings were essentially negative. Roentgenographic examination of the skull suggested an erosion of the tip of the left petrous bone but no other changes. The Kahn test of the blood was negative. The presence of an intracranial neoplasm was suspected, so spinal puncture was considered to be contraindicated and ventriculograms were made on October 8. These disclosed a moderate internal hydrocephalus with air passing freely into the dilated fourth ventricle. The presence of an intracranial neo-

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From the Departments of Pathology and Surgery, University of Oklahoma School of Medicine.

[1] Smith, Lawrence W., and Sano, Machteld E.: Moniliasis with Meningeal Involvement, J. Infect. Dis. **53**: *187-196* (Sept.-Oct.) 1933.

[2] Miale, J. B.: Candida Albicans Infection Confused with Tuberculosis, Arch. Path. **35**: *427-437* (March) 1943.

plasm was excluded. The ventricular fluid contained 66 cells per cubic millimeter, all lymphocytes. The total protein content was 50 mg. per hundred cubic centimeters. The Kolmer-Wassermann test was negative. The colloidal gold curve was 2222110000. Three weeks later, October 30, the cerebrospinal fluid contained 1,215 white blood cells with 60 per cent neutrophils and 40 per cent lymphocytes. The protein content was 200 mg. with 2 plus globulin, chlorides 650 mg. and sugar 39 mg. per hundred cubic centimeters. The Kolmer-Wassermann test was negative and the colloidal gold curve was 4554443221. No acid fast organisms were demonstrated.

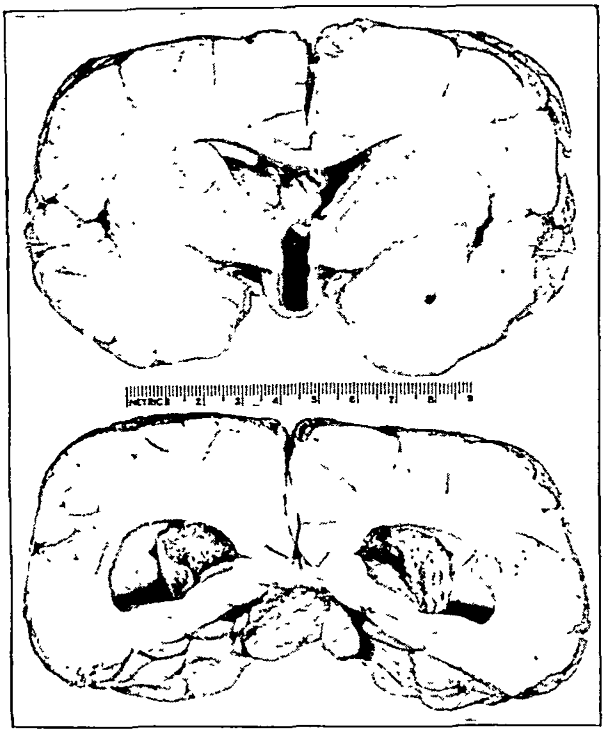
Fig. 1.—Frontal sections of the cerebral hemispheres, disclosing dilatation of the cavities of the lateral and third ventricles.

These data suggested that a low grade chronic infectious process was present: the decreased chloride content and reduced sugar level pointed toward tuberculous meningitis. Considering the absence of other symptoms of tuberculosis, the process was thought to be syphilitic on the basis of the paretic curve. Accordingly bismuth and potassium iodide therapy was instituted. The patient's temperature, which for a while varied between 98 and 102 F., became normal and he improved subjectively and objectively and was discharged with instruction to continue antisyphilitic therapy in his local dispensary.

This treatment was discontinued after thirteen injections when at another clinic he was told that he did not have syphilis. He continued to be unable to work but presented no additional symptoms until May 1942, when, overnight, he completely lost the use of his lower extremities and developed urinary and fecal incontinence. He had several convulsions. He was readmitted to the University Hospitals on June 15, 1942. At this time he appeared poorly nourished, responded to questions slowly and spoke incoherently. His temperature was 97.6 F., the blood pressure 70/50 and the pulse 92 per minute, and regular. His skin was cold and clammy. The pupils were unequal and reacted to light. The biceps and triceps reflexes were hyperactive. The abdominal, cremasteric and patellar reflexes were absent. Babinski's and Hoffman's signs were negative. There was an absence of discriminatory sensations of touch below the seventh cervical vertebra. Blood and urine examinations were essentially negative. The Kahn test of the blood was negative. The nonprotein nitrogen was 35.9 mg. and the blood sugar 165 mg. per hundred cubic centimeters. Examination of the cerebrospinal dynamics gave evidence of an almost complete block of the canal. The cerebrospinal fluid contained 23 white blood cells; total protein was 125 mg., chlorides 520 mg. and sugar 90 mg. per hundred cubic centimeters. The Kolmer-Wassermann test was negative. The colloidal gold curve was 5555543210. A twenty-four hour culture was negative. The blood sugar was 165 mg. with no glucose in the urine on repeated examinations. The patient continued to have a slight inequality of the pupils and a disturbance in lateral gaze on the left. There was bilateral papilledema. Ventriculograms disclosed some increase of the dilatation of the ventricles, including the fourth. A suboccipital craniotomy with cervical laminectomy was contemplated. Before this could be carried out, however, the patient's condition became critical; there was a disturbance of swallowing and a terminal rise in temperature to 107 F. The patient died on July 9, 1942.

At necropsy (ten hours after death) the body was 180 cm. tall and weighed approximately 65 Kg. There was wasting of the flesh, particularly of the extremities. Pressure sores were noted over the sacrum and the trochanteric areas about 10 by 8 cm. each. The superficial lymph nodes were not palpably enlarged. The peritoneal cavity contained no excess fluid; its surfaces were smooth and glistening. There were no anomalies in the position of the abdominal organs. There were some fibrous adhesions posteriorly in the left pleural cavity and some over the base posteriorly in the right pleural cavity. No changes were noted in the pericardial cavity. The heart measured 10.5 cm. from base to apex and 11 cm. across the base. The chambers and their orifices were proportionate and their valves were delicate. The heart weighed 325 Gm.

There was some reddening of the bronchial mucosa, and the lumens of the bronchi contained thick mucus. The interlobar surfaces of the right lung were almost completely obliterated by fibrous adhesions. The anterior portions were pink and crepitant; the posterior portions were lumpy and consolidated. The cut surfaces were mottled red and gray, with the lumens of the bronchial branches prominent and their mucosa reddened. This lung weighed 725 Gm. The left lung resembled the right and weighed 670 Gm.

No pertinent changes were noted in the spleen, liver, gallbladder and biliary ducts, pancreas, esophagus, stomach, duodenum, jejunum, ileum, colon and rectum, adrenal glands and kidneys. The wall of the urinary bladder was of the usual thickness. The mucosa was reddened and there were yellow gray crusts overlying prominent mucosal folds. Smears from these areas disclosed gram positive cocci in clusters. The prostate, seminal vesicles and testes were of usual size and appearance.

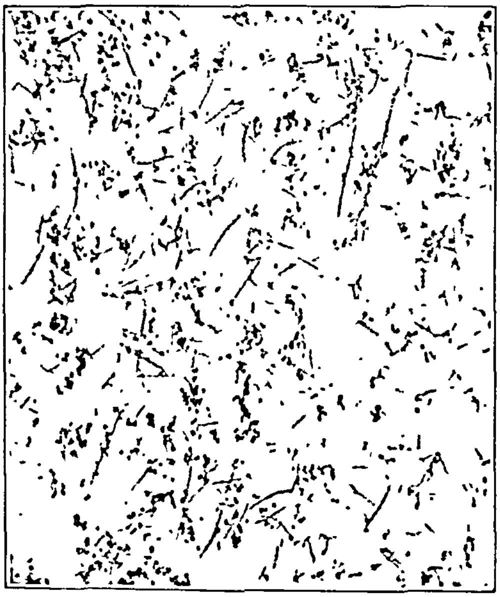
Fig. 2.—Mycelia within the subarachnoid space. × 125.

Brain tissue protruded through the trephine holes in the parietal regions of the calvarium. The dura mater was tense.

The leptomeninx over the convex surfaces of the cerebral hemispheres was pale, delicate and transparent. The convolutions were flat and the sulci were narrow. The leptomeninx was thickened and cloudy over the base of the brain, obscuring the vessels of the circle of Willis and the roots of the cranial nerves. There was bulging and thinning of the infundibulum. A thick creamy liquid filled the cisternal spaces including the cisterna magna. The cerebral and cerebellar hemispheres, the cerebral peduncles, the pons and the medulla oblongata were proportionate and symmetrical. The brain weighed 1,300 Gm. The sella turcica appeared broad and measured 2.6 by 2.2 by 1.2 cm. The hypophysis was flat and occupied the base of the sella. It measured 1.6 by 1.2 by 0.6 cm. No changes were noted in the dural sinuses and the dura proper. Further examination after fixation disclosed intact symmetrical patterns on the cut surfaces of the cerebral peduncles. The aqueduct of Sylvius was slitlike and measured 0.5 by 0.3 cm. The cut surfaces of the vermis cerebelli had the usual delicate pattern. The cavity of the fourth ventricle was distended. The floor appeared intact. No change was noted on the cut surfaces of the pons, medulla oblongata and cerebellar hemispheres. On frontal sections of the cerebral hemispheres the cavities of the lateral and third ventricles were five to ten times their usual width (fig. 1). There was asymmetry of the foramens of Monro, the right being twice the size of the left. Otherwise there was perfect symmetry of the two sides with the usual patterns of the gray and white matter well preserved. No areas of softening or hemorrhage were noted. On microscopic examination pertinent changes of the heart, lungs, spleen, liver, pancreas, adrenal glands, kidneys, urinary bladder, testes and aorta were limited to acute focal pneumonia, chronic and acute cystitis and, in the testes, atrophy with hyaline change of many of the seminiferous tubules. There was no syphilitic aortitis

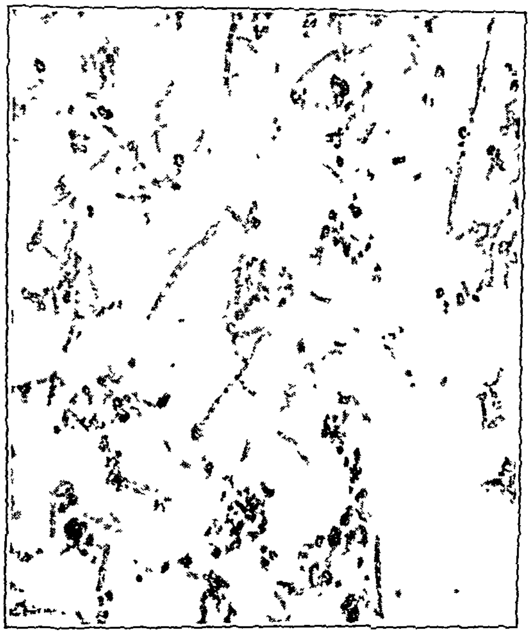

Fig. 3.—Mycelia within the subarachnoid space, × 300.

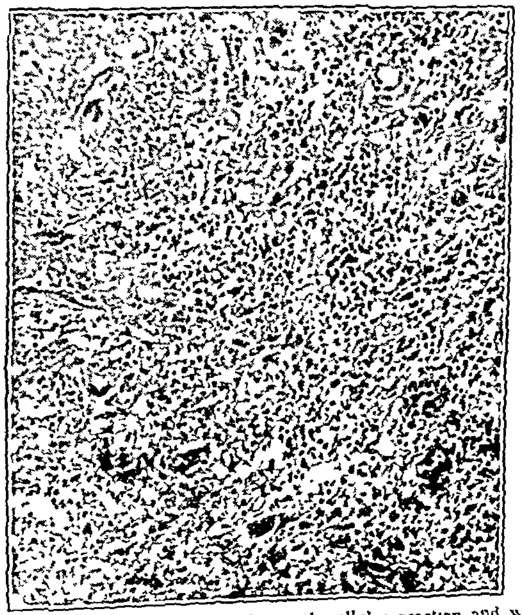

Fig. 4.—Mycelia in the leptomeninx with cellular reaction and within giant cells, × 125.

Preparations from the brain were stained with hematoxylin and eosin and also by Gram's method. Within the leptomeninx covering the pons and particularly the cerebellum there was an increase of the connective tissue with structures resembling tubercles. These had central areas of necrosis and giant cells. Within these nodules and elsewhere there were septate mycelia branching at acute angles. Many of these mycelia lay free or surrounded by polymorphonuclear granulocytes (figs. 2 and 3). Other mycelia were intracellular within huge giant cells (figs. 4 and 5). Some of these giant cells were of the foreign body type, others of the Langhans type. There were also infiltrations with lymphocytes, plasma cells and large mononuclear cells. There was no involvement of the underlying brain tissue. Ziehl-Neelsen stain for acid fast organisms was negative.

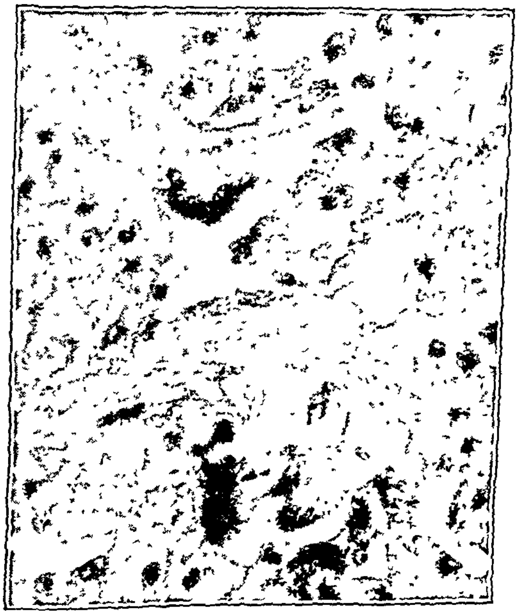

Fig. 5.—Mycelia in the leptomeninx with cellular reaction and within giant cells, × 560.

COMMENT

The clinical course and laboratory data provided no conclusive information as to the nature of the central nervous system involvement, except that the presence of a neoplasm could be excluded. The evidence was in favor of a chronic inflammatory process. If mycotic involvement had been suspected, culture of the cerebrospinal fluid in appropriate mediums might have resulted in a demonstration of the causative organism. At necropsy the lesion so closely imitated a tuberculous lesion that no cultures were made. Examination of the fixed and stained tissues, however, revealed the presence of a fungus and the reaction to it. Close scrutiny of this organism left no doubt as to its identity as a fungus of the genus Candida, probably Candida albicans.

SUMMARY

A Negro aged 25 died of meningitis produced by a fungus of the genus Candida, probably *Candida albicans*. This is the third reported instance of meningeal involvement by the organism Candida and the first in which localization occurred in the central nervous system only.

SEVERE BURNS FROM INFLAMMABLE COWBOY PANTS

W. EMORY BURNETT, M.D.
and
H. TAYLOR CASWELL, M.D.
Philadelphia

During the period from August 1944 to March 1945 3 patients with third degree burns involving most of both lower extremities were admitted to Temple University Hospital. These occurred in boys aged 10, 8 and 6½ years respectively and were remarkably similar in distribution, severity and history. All of these children had been wearing cowboy pants covered with a shaggy material and bearing the trade name "Gene Autry." In all 3 cases apparently trivial exposure to fire caused immediate and complete ignition of the pants.

The first patient was playing at a bonfire and an ignited stick, which had been thrown into the air, struck the side of his pants in descent. This was followed by what was described as a sudden bursting into flame of all the shaggy material on the clothing. The second patient ran by a small collection of what was described as smoldering leaves, with immediate and complete ignition of the pants. The third patient leaped over a small pile of burning rubbish with the same immediate result.

In the April 12, 1945 issue of the Philadelphia *Inquirer* an article was carried describing the death of 3 children in Washington, D. C., and of another child in the Philadelphia area from similar accidents. Two additional nonfatal burns were also reported in the Philadelphia area. The newspaper stated that all of these children were wearing the so-called "Gene Autry" cowboy suits, which were manufactured by "a New York concern with another plant in Passaic, N. J." The newspaper also stated that the suits were to be subjected to a Congressional investigation and that "leading Philadelphia area stores have withdrawn this particular type of playsuit from their stocks."

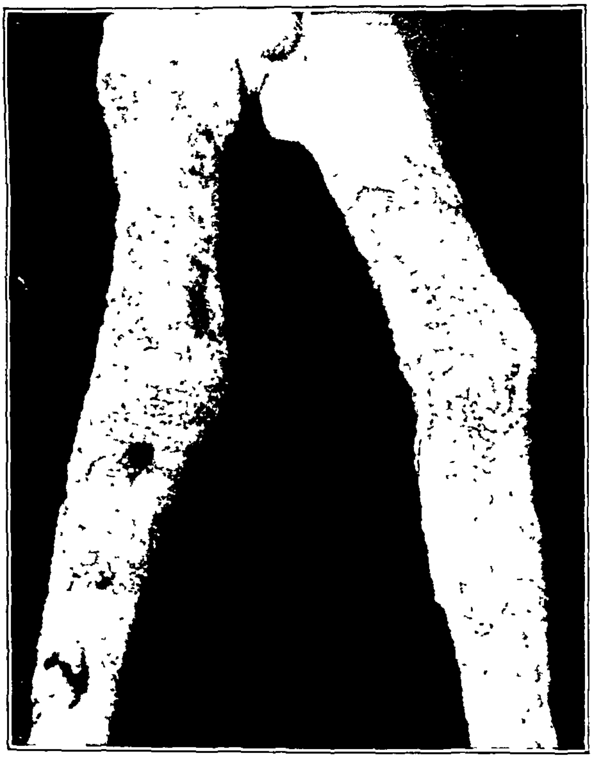

Fig. 1.—Full thickness burns of patient 1 three months after admission, ready for grafting.

The patients admitted to Temple University Hospital were not mentioned in the newspaper article but had remarkably similar experiences in that the burns were of the third degree and involved the entire circumference of the thighs and lower part of the legs, approximately 30 per cent of the body surface. The feet were not involved in any instance, and only the first patient suffered burns of the buttocks.

Patients 1 and 2 were originally admitted to this institution and treated in an exactly similar fashion. Patient 3 was transferred after six months' treatment in another institution, during which time feces had infiltrated under a soft eschar of hemoglobin and penicillin with prolonged contamination and sepsis.

PRINCIPLES OF TREATMENT

The following principles of treatment were used in the three clinical stages of third degree burns:

1. *Stage of Shock.*—On admission the patients were wrapped in sterile sheets and taken to the operating room after appropriate morphine dosage. In the operating room, under aseptic technic, the remaining clothing was cut away and the burned areas were gently cleansed with sterile cotton balls saturated in warm sterile water and white soap. Loose skin was gently debrided and the entire extremity wrapped in petrolatum gauze, dry gauze, mechanic's waste and Ace elastic bandage as recommended by Koch.[1] On return to the ward, plasma infusion was begun. The amount of plasma given was estimated on the percentage of body surface involved, 50 cc. being given for each 1 per cent of body surface burned. By the means of daily hematocrits, proteins and blood counts combined with daily blood chlorides and carbon dioxide combining power estimations the chemical and protein requirements were closely followed. In no twenty-four hour period did the amount of glucose, saline solution and so on exceed the amount of plasma. All the patients were given 100,000 units of penicillin intramuscularly each twenty-four hours in twelve equal doses. Sulfonamides by mouth were given to patients 1 and 2 for the first two weeks following the burn. Massive vitamin therapy was started immediately, which consisted of niacinamide 100 mg., thiamine hydrochloride 50 mg., riboflavin 10 mg. and ascorbic acid 200 mg. daily intravenously and vitamin A 100,000 units daily intramuscularly. At the same time measures were instituted to maintain a concentrated diet containing as high as possible a percentage of protein and carbohydrates. This was accomplished by the use of standard high carbohydrate, high protein hospital formulas and the encouragement of the parents to bring in food of which these children were particularly fond.

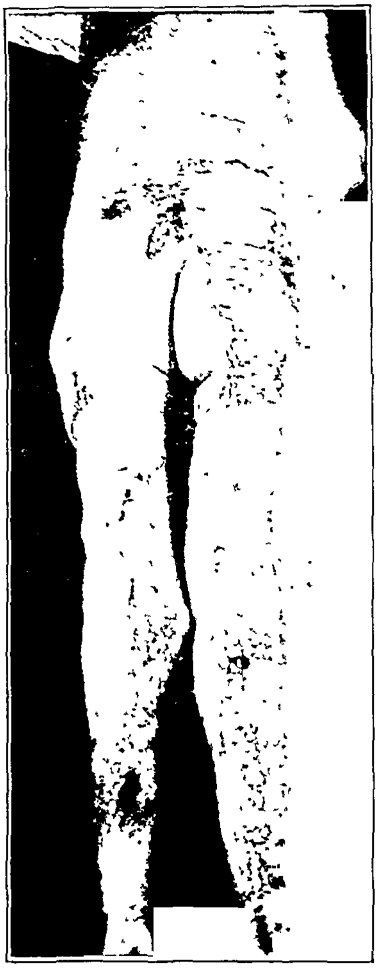

Fig. 2.—Posterior view of burns of patient 1 three months after admission. Note third degree burns over buttock. Sacral ulcerations are healing decubitus ulcers.

2. *Stage of Infection.*—All of these cases were third degree burns and, despite the Koch compression treatment and redress-

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[1] Allen, H. S., and Koch, S. L.: The Treatment of Patients with Severe Burns, Surg., Gynec. & Obst. 74:914-923, 1942.

ings under operating room technic, all became infected. This has been our experience in various cases of third degree burns and also the experience of others. The original dressings were not disturbed until fever, odor and appearance made the diagnosis of infection apparent. All dressings were done in the operating room under aseptic precautions and with the use of general anesthesia. Cultures of the burns were taken whenever it seemed indicated. The initial dressings were accompanied by débridement of obvious slough by sharp dissection. From this time on the dressings were kept saturated with tyrothricin solution and the systemic penicillin was continued. Blood was used frequently during this stage of infection, and at least 500 cc. of blood per week was administered to combat anemia, and amino acids and other substances to maintain blood proteins at a satisfactory level.

During this stage patient 1 exhibited clinical evidence of gastric ulceration, which was treated by an ulcer diet and aluminum hydroxide, with rapid abatement of symptoms. It was a most difficult problem to maintain a high protein intake in these patients in spite of 500 cc. of amino acids intravenously daily. (The lack of appetite was a great tribulation to us.) It is interesting to note that positive nitrogen balance, as evidenced by weight gain, was not attained until grafting was begun.

3. *Stage of Grafting.*—When slough had separated under the tyrothricin dressings and the ulcerated areas appeared to be satisfactorily granulating, grafting was begun. Positive cultures can always be obtained from such granulating areas and were not alone considered as contraindications to grafting. The temperature curve and the patient's nutritional status, as evidenced by his blood proteins, were more reliable indicators. Tyrothricin locally was continued throughout this stage of grafting. Systemic penicillin was also given if any febrile episodes developed during this era. All skin grafts were 0.012 inch in thickness and were removed by means of the Padgett dermatome. It was possible by this means to take several grafts from the same area over a course of months. The Sano[2] plasma clot technic for fixing grafts was used throughout. This consists in using liquefied plasma on the under surface of the grafts and cell extract on the recipient areas. The graft is then put in place and firm, even pressure applied for five minutes. In practically all of the grafting done in these cases this resulted in what would be considered a quite satisfactory take. The dressings were not changed between grafting procedures. Weekly transfusions, daily amino acids and massive vitamin therapy were continued, and the efforts to maintain a high protein, high carbohydrate intake were pursued.

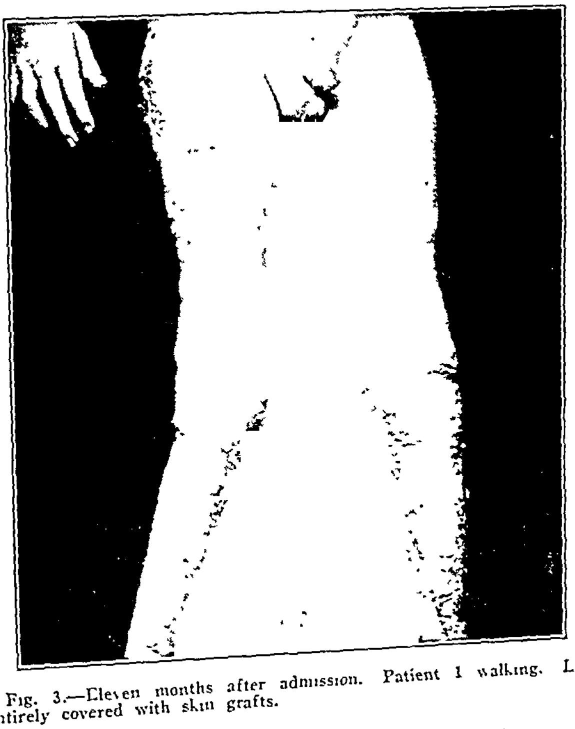

Fig. 3.—Eleven months after admission. Patient 1 walking. Legs entirely covered with skin grafts.

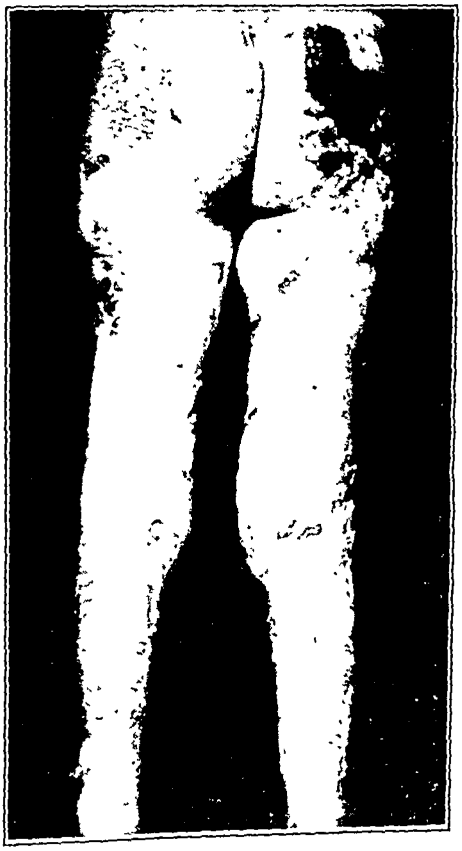

Fig. 4.—Posterior view eleven months after patient 1 was admitted. Ulcerated area on buttock healing rapidly.

Throughout this period all the patients experienced, at intervals, febrile episodes which usually responded to resumption of systemic penicillin and redressing. Cultures of the burned areas during these episodes usually showed hemolytic streptococci, and no grafting was attempted at these times.

RESULTS AT PRESENT

Patient 1 is now completely grafted, walking well and discharged fourteen months after admission. Patient 2 is now 75 per cent covered with grafts and is walking alone eight months after admission. Patient 3 (admitted six months after the burn) is progressing slowly, since he has been the most difficult to handle. His nutritional and vitamin state were extremely negative on admission, his morale low and his lack of appetite exasperating. For long periods small test grafts failed to live, and only in the past three months have we been able to proceed with grafts successfully. In general we have feared massive, one stage coverage grafts where the recipient areas were so huge (30 per cent of the body surface) and the donor areas so limited, since failure would be a catastrophe. His condition is gradually improving. Recent congo red determinations show a positive reaction only on this patient, patients 1 and 2 showing none. He is taking liver substance orally as advised by Jacobi and Grayzel[3].

Renal function on all 3 patients is not impaired.

CONCLUSION

Material made into clothing should be thoroughly tested as to inflammability before being offered for sale to the public.

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[2] Sano, M. E.: Coagulum Contact Method of Skin Grafting as Applied to Human Grafts, Surg., Gynec. & Obst. **77**: 510-513, 1943.

[3] Jacobi, M., and Grayzel, H.: Generalized Secondary Amyloidosis, J. Mount Sinai Hosp. **12**: 339-363, 1945.

Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

Austin Smith, M.D., *Secretary.*

MERCUHYDRIN SODIUM SOLUTION.—Meralluride Sodium Solution.—A sterile aqueous solution containing in each cubic centimeter approximately 119 mg. of mercuhydrin and 13 mg. of theophylline, adjusted with sodium hydroxide to a p_H of about 7.5. Each 1 cc. of mercuhydrin sodium solution contains the equivalent of 39 mg. of mercury and 48 mg. of theophylline-U. S. P.

Actions and Uses: Mercuhydrin Sodium Solution is a mercurial diuretic claimed to be indicated in the edema of cardiorenal disease and of nephrosis, ascites of liver disease and other conditions in which a mercurial diuretic may be proposed.

It is claimed to be well tolerated systemically and significantly free from reaction at the site of injection when given intramuscularly. It is rapidly absorbed following intramuscular injection. It also is administered by intravenous injection.

The drug is contraindicated in acute nephritis and chronic kidney disease in which well defined tubular and glomerular changes are present. Since mercury is known to give rise in sensitive patients to side effects such as stomatitis, gastric disturbance, vertigo, febrile reaction and cutaneous eruptions, it is suggested that initial tests and careful regulation of dosage be followed when mercurial diuretics are used. During prolonged administration the urine should be examined periodically for albumin casts and blood cells.

Dosage.—Depending on the condition of the patient and route and the frequency of administration, the usual dose of Mercuhydrin Sodium Solution is from 1 cc. to 2 cc. In view of occasional cases of idiosyncrasy to mercurials, the initial dose could be 0.5 cc. or less. Subsequent injections may be given twice weekly, as indicated by the condition of the patient. One investigator has recommended smaller doses repeated at shorter intervals and emphasizes the importance of observing daily water balance instead of weekly observations.

Tests and Standards.—

Mercuhydrin sodium solution is clear, colorless to pale yellow and odorless and possesses a bitter taste. The p_H of the solution is between 7.4 and 7.6 at 25 C. Mercuhydrin sodium solution should be protected from light.

Five cubic centimeters of mercuhydrin sodium solution responds to tests for the presence of mercury, allylsuccinylurea and theophylline given under Mercuhydrin-N. N. R. Evaporate 1 cc. of mercuhydrin sodium solution to dryness in a tared porcelain dish and ignite: the residue responds to tests for sodium.

To 5 cc. of mercuhydrin sodium solution add 0.5 cc. of sodium acetate solution and 0.3 cc. of diluted acetic acid; dilute to 10 cc. with water and divide the solution into two portions. Add to one portion 0.2 cc .of sodium sulfide solution and compare with the other portion: only a very faint difference in coloration of the test solution is noticeable immediately.

Determine the mercury content of 2 cc. of mercuhydrin sodium solution, accurately measured, by the method given under Mercuhydrin-N. N. R.: the amount of mercury found is not less than 95 per cent nor more than 105 per cent of 39 mg. per cubic centimeter.

Determine the theophylline content of 5 cc. of mercuhydrin sodium solution, accurately measured, by the method given under Mercuhydrin-N. N. R.: the amount of anhydrous theophylline found is not less than 95 per cent and not more than 105 per cent of 43.6 mg. per cubic centimefer.

Lakeside Laboratories, Inc., Milwaukee

Solution Mercuhydrin Sodium: 1 cc. and 2 cc. ampuls.

MANNITOL HEXANITRATE (See New and Nonofficial Remedies, 1945, p. 334).

The following dosage form has been accepted:

William H. Rorer, Inc., Philadelphia

Tablets Mannitol Hexanitrate: 32 mg.

PENICILLIN (See New and Nonofficial Remedies, 1945, p. 214).

The following additional dosage form has been accepted:

Abbott Laboratories, North Chicago, Ill.

Penicillin Sodium Salt: 200,000 Oxford Unit vials.

Council on Foods and Nutrition

ACCEPTED FOODS

The following additional foods have been accepted as conforming to the Rules of the Council on Foods and Nutrition of the American Medical Association for admission to Accepted Foods.

James R. Wilson, M.D., *Secretary.*

PREPARATIONS USED IN THE FEEDING OF INFANTS (*See* Accepted Foods, 1939, p. 156)

Swift & Company, Chicago.

Swift's Meats for Juniors, including Diced Beef, Diced Pork, Diced Lamb, Diced Veal, Diced Beef Liver and Diced Calf Heart, are made from meats trimmed of fat, sinews and connective sheaths with added salt, prepared under inspection of the Meat Inspection Division of the United States Department of Agriculture.

Analysis (submitted by manufacturer).—

	Moisture, %	Protein, %	Fat, %	Ash, %
Diced beef	74.7	22.63	1.70	1.47
Diced pork	70.7	21.81	6.48	1.51
Diced lamb	74.3	18.19	6.3	1.41
Diced veal	76.7	20.38	2.1	1.52
Diced beef liver	70.2	21.56	4.33	1.68
Diced calf heart	76.3	18.19	3.35	1.44

Mineral Components:

	NaCl, %	Calcium, Mg./100 Gm.	Phosphorus, Mg./100 Gm.	Iron, Mg./100 Gm.
Diced beef	0.47	10	210	3.3
Diced pork	0.48	14	200	1.5
Diced lamb	0.53	18	180	2.4
Diced veal	0.47	11	210	1.6
Diced beef liver	0.48	30	330	7.2
Diced calf heart	0.41	15	220	4.8

Vitamins.:

	Thiamine, Mg./100 Gm.	Riboflavin, Mg./100 Gm.	Niacin, Mg./100 Gm.
Diced beef	0.017	0.326	4.68
Diced pork	0.452	0.238	3.74
Diced lamb	0.042	0.287	5.33
Diced veal	0.052	0.350	6.28
Diced beef liver	0.03	2.200	7.10
Diced calf heart	0.156	1.067	4.44

Total Calories:

Diced beef	1.05 per gram
Diced pork	1.45 per gram
Diced lamb	1.30 per gram
Diced veal	1.00 per gram
Diced beef liver	1.25 per gram
Diced calf heart	1.03 per gram

Swift's Meats for Babies, including Strained Beef, Strained Pork, Strained Lamb, Strained Veal, Strained Beef Liver and Strained Calf Heart, are made from meats trimmed of fat, sinews and connective sheaths with added broth and salt and are prepared under inspection of the Meat Inspection Division of the United States Department of Agriculture.

Analysis (submitted by manufacturer).—

	Moisture, %	Protein, %	Fat, %	Ash, %
Strained beef	78.6	17.69	3.01	1.21
Strained pork	75.9	17.06	6.04	1.15
Strained lamb	79.0	15.63	4.48	1.32
Strained veal	82.1	16.38	1.04	1.19
Strained beef liver	78.2	15.94	4.26	1.22
Strained calf heart	82.7	13.38	2.51	1.20

Mineral Components:

	NaCl, %	Calcium, Mg./100 Gm.	Phosphorus, Mg./100 Gm.	Iron, Mg./100 Gm.
Strained beef	0.30	12	140	2.8
Strained pork	0.38	14	180	1.7
Strained lamb	0.45	16	170	2.3
Strained veal	0.38	17	180	1.6
Strained beef liver	0.53	40	270	7.7
Strained calf heart	0.30	12	150	3.6

Vitamins:

	Thiamine, Mg./100 Gm.	Riboflavin, Mg./100 Gm.	Niacin, Mg./100 Gm.
Strained beef	0.010	0.242	3.24
Strained pork	0.346	0.278	4.74
Strained lamb	0.026	0.264	4.00
Strained veal	0.024	0.288	4.90
Strained beef liver	0.014	2.00	4.41
Strained calf heart	0.064	0.818	4.46

Total Calories:

Strained beef	0.98 per gram
Strained pork	1.22 per gram
Strained lamb	1.03 per gram
Strained veal	0.75 per gram
Strained beef liver	1.02 per gram
Strained calf heart	0.77 per gram

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SATURDAY, APRIL 6, 1946

RECURRENT MALARIA

Several thousand soldiers with recurrent attacks of benign tertian malaria were observed by four army medical officers[1] in a U. S. general hospital on a nonmalarial South Pacific island used as a rest area. Fifty soldiers were selected for complete organic and psychologic analysis. These men had been unable to return to combat because of chronic malarial symptoms and the frequency of recurrence (averaging ten attacks over a period of approximately one year). Suppressive therapy with atabrine had not influenced the recurrent course of the disease, although usual antimalarial therapy had readily controlled the severe paroxysms. The group was divided into approximately four equal categories as to state of physical condition and degree of adjustment so that the manifestations of the disease could be correlated. As a whole, the general white population of the army overseas in this area was approximated by the group in age (average 25 years), intelligence distribution and general state of health except for the effects of malaria.

The constancy of symptoms and the variability in physical reaction from severe debility to general good physical condition and the paucity of significant clinical features were impressive. Weight loss in excess of the controls was almost constantly present and was paralleled by the nutritional status and the degree of debility evident on inspection. Otherwise physical examination did not reveal abnormalities except for a palpable liver and spleen in a few cases. Extensive laboratory studies including tests of adrenal function did not show evidence of damage or dysfunction of the organ systems. Repeated malarial attacks and considerable amounts of atabrine had not apparently resulted in any physical impairment in this group other than debility.

Fatigability, the chief manifestation of the disease, was measured objectively by means of a running in place test and the Schneider index. Consistent differences in response were noted between the malarial and control groups, but individual comparisons were not possible because of the diversity of individual responses. The Rorschach technic objectively displayed mental apathy as an expression of fatigue and thus corroborated the clinical impression of lowered vitality, initiative and interest. Further investigation with this test in such cases would be desirable.

The characteristic symptomatology in these chronic malarial patients in intervals between attacks included weakness or fatigability 94 per cent, intolerance to heat 92 per cent, tension 78 per cent, chronic headache of tension type 65 per cent, exertional dyspnea 65 per cent, anorexia 45 per cent, insomnia 45 per cent, "blackouts" and palpitation 40 per cent, and splenic tenderness 27 per cent. From a correlation of these symptoms with physical condition, personality adjustment and malaria the authors concluded that "a considerable portion of the symptoms could be attributed to the recurrent attacks of malaria alone." The best adjusted and the least debilitated patients had relatively few complaints except weakness and fatigability after exercise. The patients who had adjusted poorly in civil or military life made poor adjustment to the recurrent attacks and became incapacitated early with a wide variety of symptoms. The adjustment of the individual to the stresses of illness and to concurrent situational factors contributed to the development, perpetuation and intensification of the symptoms of chronic malaria.

The authors emphasize that treatment should be directed to the person as a whole and not to the malaria alone. Such measures must include the prevention and control of the development of the debility and poor adjustment conducive to chronic symptoms. In military life a study of the entire reaction of the soldier is needed in determining proper duty status and assignment. Hospitalization should be minimized and proper recreation provided to reduce the tendency toward development of neurotic patterns. Thorough simple malarial instruction is essential. In both military and civil practice individual reassurance to patients is necessary to allay the common concerns of future permanent disability and ill health from recurrent malaria, which have arisen from ignorance and misconceptions of the effects of the disease.

The military value of these studies in the effective utilization and treatment of affected personnel is apparent. In addition, the problem of the chronic malarial patient will assume increasing importance in civil life as more and more men are demobilized who have acquired the disease while stationed in malarial areas throughout the world.

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[1] Tumulty, Philip A.; Nichols, Edward; Singewald, Martin L., and Lidz, Theodore: An Investigation of the Effects of Recurrent Malaria: An Organic and Psychological Analysis of 50 Soldiers, Medicine 25: 17 (Feb.) 1946.

PAINFUL AMPUTATION STUMPS

Several methods to lessen the risk of development of painful amputation stumps are recommended in the Neurological Section of the Military Surgical Manual.[1] Among these are (*a*) alcohol injection of the nerve stump,[2] (*b*) excision of a wedge of the nerve end and suture of the flaps [3] and (*c*) a combination of the two procedures.[4] Other surgeons have suggested (*d*) cauterizing the end of the nerve with a high frequency current [5] and (*e*) burying the nerve stump in bone.[6] Since these procedures have not been universally effective, Poth and his associates [7] of the Surgical Research Laboratory, University of Texas, have restudied the problem on experimental animals.

In preliminary experiments a 2 cm. segment of the sciatic nerve was excised in a group of 9 dogs under anesthesia and the proximal stump replaced in its bed without further treatment. After periods varying from thirty to ninety days the animals were painlessly killed and the tissues examined. In all instances typical neuroma formation had occurred. In a second group of dogs the proximal nerve stump was injected with absolute alcohol. In all instances typical end-bulb neuromas had formed by the end of thirty days. In still other groups of dogs the proximal nerve stump was placed in a closed cellophane tube or an arterial sleeve or was inserted into a snugly fitting closed glass tube about 2.5 cm. long. In 11 dogs in which the nerve stump had remained within the glass tube there was no evidence of neuroma formation. In 5 of these dogs the observation period was as long as two hundred and thirty days.

From these experiments it appears that the growth pressure of nerve axons can be overcome by their complete isolation from surrounding nutritional factors. Since the glass tube technic is clinically inapplicable, Poth sought to accomplish the same axon inhibition by chemical means. He found that his selected chemical agent must not cause massive necrosis of the nerve, since massive necrosis was equivalent to a simple resection at a higher level. The ideal chemical agent would be one that would inhibit axon growth and at the same time stimulate the growth of surrounding fibrous tissues. This peripheral proliferation would form an enclosing fibrous tube whose lateral pressure might overcome the growth pressure of the regenerating nerve fibers. Poth found that tannic acid and gentian violet are the nearest approach to this ideal axon inhibitor.

To test these substances the proximal nerve stumps of 14 dogs were injected with either 0.5 cc. of 10 per cent tannic acid or 0.5 cc. of 2 per cent gentian violet. In no instance could the development of a neuroma be demonstrated in these dogs on their examination from thirty to ninety days later. The technic was therefore tried on 15 clinical patients. All of the severed nerves which could be identified during amputation of the lower extremity of these patients were injected. To make the injection, a tight rubber band or a small clamp was applied about 3 inches from the end of each severed nerve, and the end of the nerve was ligated with fine silk. Multiple injections were made into the isolated nerve segment, in most cases from 3 to 5 cc. 2 per cent gentian violet being used. The compression clamp or rubber band was then removed.

While the lapse of time is too short to draw final conclusions, the investigators report that patients have not thus far suffered untoward pain because of the procedure, nor has healing been compromised in any way. Poth and his associates hope that this method of preventing the formation of end-bulb neuromas may contribute to the solution of problems of the painful amputation stump and the phenomenon of the phantom limb.

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[1] National Research Council: Military Surgical Manual, Philadelphia, W. B. Saunders Company, 1943, vol. 6.

[2] Huber, G. C., and Lewis, Dean: Amputation Neuromas, Arch. Surg. **1**: 85 (July) 1920.

[3] Corner, E. M.: Proc. Roy. Soc. Med. **11**: 7, 1918.

[4] Stookey, Byron: Surgical and Mechanical Treatment of Peripheral Nerves, Philadelphia, W. B. Saunders Company, 1922, chapter 21, p. 461.

[5] Kirk, N. T.: Amputations, in Lewis, Dean, Practice of Surgery, 1943, vol. iii, chapter 10.

[6] Boldrey, Edwin: Amputation Neuroma in Nerves Implanted in Bone, Ann. Surg. **118**: 1052 (Dec.) 1943.

[7] Poth, E. J., and Bravo-Fernandez, E.: Prevention of Neuroma Formation by Encasement of the Severed Nerve End in Rigid Tubes, Proc. Soc. Exper. Biol. & Med. **56**: 7 (May) 1944. Poth, E. J.; Fernandez, E. B., and Drager, G. A., ibid. **60**: 200 (Nov.) 1945.

STREPTOMYCIN

Recent reports concerning the value of streptomycin in the treatment of tularemia, influenzal meningitis and urinary infections have created widespread demand for this antibiotic preparation. Unfortunately streptomycin, or perhaps the impurities now present in many commercial preparations, have toxic potentialities. Two fatalities from histamine-like reactions are known to have occurred, eighth nerve damage has been reported and delayed fatty infiltration of the kidneys has been observed in animals following administration of streptomycin. Not all batches of this drug produce these reactions; however, only extensive and well controlled laboratory examinations of each batch can separate the harmful from the safe lots. In addition, the difficulties encountered in the production of streptomycin are greater than those encountered in the production of penicillin.

Because of the peculiar problems incident to the production of penicillin and because of the importance of the drug, Congress enacted special legislation to ensure the safety and efficacy of use of each batch of this drug. This legislation provides for certification of each batch of penicillin by the Food and Drug Administration before interstate distribution. Such legislation has not yet been enacted with respect to streptomycin. Temporary control is now exercised by the Civilian Production Administration General Allocation order M-300 as amended.

At a recent meeting of the Food, Drug and Cosmetic Section of the New York Bar Association a resolution was passed condemning further legislation designed to amend the Federal Food, Drug and Cosmetic Act to provide control over specific drugs. Such legislation does not seem desirable. The New Drug provisions of the Federal Food, Drug and Cosmetic Act might however be amended to provide for the certification of any new drug when the administrator of the Federal Security Agency, on adequate evidence, deems such certification necessary for the protection of the public health. Certainly the problems involved in the production and distribution of safe and efficacious batches of streptomycin are serious. The record of the Food and Drug Administration in ensuring a safe and efficacious supply of penicillin commends the procedure now in force for the control of this drug. Furthermore, since it is quite probable that new antibiotics will be discovered for which a form of predistribution control will be desirable, general legislation to provide a mechanism to meet this need as it arises appears to be highly desirable.

Current Comment

SIMPLE TEST OF BLOOD AMYLASE ACTIVITY IN PANCREATIC AND OTHER DISEASES

The exact chemical nature of amylase is not known. At present the amount of amylase in the blood under different conditions cannot be determined, but its amylolytic activity can be estimated more or less closely by various methods. Normally the amylase activity of the blood appears to remain within fairly constant limits. An increase occurs in the early stages of acute pancreatitis;[1] consequently estimations of the amylase activity may be helpful in the diagnosis of pancreatic and other diseases. A number of methods are available for that purpose, but as yet a reliable and simple method for routine work has not come into general use. The method worked out by Polowe[2] seems well suited for practical use at this time. He estimates the amylase activity of blood by the amount of sugar produced by plasma or serum in starch solution under standard conditions. After incubation of such a mixture for thirty minutes at 37.5 C. a small quantity of the mixture is added to copper solution (Benedict's), which is boiled and centrifugated. The resulting precipitate is compared with that in a control mixture with normal plasma or serum and subjected to the same treatment. The results are recorded in general terms as showing normal, decreased or increased amylase action. Polowe found this simple method valuable in the diagnosis especially of acute pancreatitis in which the amylase activity of blood was increased in the early stages. But increased activity was not pathognomonic of pancreatitis, as increase was found to occur in some cases of pneumonia, high intestinal obstruction, acute splenic trauma, duodenal ulcer, perforation of gastric ulcer and other conditions. Polowe also enumerates a number of conditions in which he found diminished amylase activity of the blood, but in no case was decrease associated with acute pancreatitis. He mentions especially that, in cases of epigastric pain or distress as the chief symptom, tests of blood amylase activity may prove a valuable diagnostic aid.

IMMERSION FOOT AND FROSTBITE

Patients with immersion foot or frostbite frequently have late complications which present problems of treatment, disability, evaluation and rehabilitation. These patients may have annoying complaints of a neuritic or vasospastic nature in addition to any disability caused by the loss of fingers or toes. There are disturbances of cutaneous sensations—anesthesia, hyperesthesia—or vasospastic symptoms such as hyperhidrosis, claudication, cyanotic attacks or ulceration. Deep pain or pain on use may be the principal disabling complaint. In 23 cases of immersion foot or frostbite Southworth[1] used sympathectomy in 4, alcohol sympathetic blocks in 9 and repeated procaine blocks in 4. Disturbances of cutaneous sensation, which are not especially disabling, were frequently relieved by temporary sympathetic block. However, when the symptoms were distressing and not relieved by alcohol blocks, sympathectomy provided relief. Alleviation of vasospastic symptoms was also provided by alcohol blocks. Since these symptoms regress spontaneously and may not become static for as long as eighteen months after injury, sympathectomy can be deferred. If thinning of the skin appears within the first three months, sympathectomy should be performed. Unfortunately the deep pain is not influenced by sympathectomy or alcohol block. In this small group of patients with immersion foot and frostbite sympathectomy has produced beneficial effects on certain late symptoms but does not relieve the deep pain or prevent partial disability.

EXTENSION OF INTERNSHIPS

The Procurement and Assignment Service reports that its office has been flooded with requests for extensions of internships to July 1, 1946. Early in January 1945 Directive 386 was distributed to all hospitals, stating specifically that each extension must be individually requested before February 1. The Procurement and Assignment Service now announces that it is not in a position at this time to ask cancellation of active duty orders and that even under circumstances of urgent and dire need, such as may be found in small hospitals, the Army and the Navy will not be able to give consideration to such requests at this late date.

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[1] Elman, Robert; Arneson, Norman, and Graham, E. A.: Value of Blood Amylase Estimation in the Diagnosis of Pancreatic Disease, Arch. Surg. 19:943 (Dec.) 1929. Lewison, E. F.: The Clinical Value of the Serum Amylase Test, Surg., Gynec. & Obst. 72:202 (Feb.) 1941.

[2] Polowe, David; Ratish, H. D., and Bullowa, J. G. M.: Measurement of Blood Amylase Activity by Cuprous Oxide Precipitation, Am. J. Clin. Path., Tech. Supp. 6:62 (Sept.) 1942. Polowe, David: Blood Amylase, ibid. 13:288 (June) 1943; Blood Amylase Activity in Pancreatitis and Other Diseases, a Simple Diagnostic Aid, Surg., Gynec. & Obst. 82:115 (Feb.) 1946.

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[1] Southworth, James L.: The Role of Sympathectomy in the Treatment of Immersion Foot and Frostbite, New England J. Med. 233:673 (Dec.) 1945.

MEDICINE AND THE WAR

VETERANS

APPOINTED CHIEF MEDICAL DIRECTOR OF DEPARTMENT OF MEDICINE AND SURGERY

Gen. Omar N. Bradley, administrator of veterans affairs, recently announced that Major Gen Paul R. Hawley retired from the Army, closing a career of twenty-nine years in the Army Medical Corps, to accept an appointment as chief medical director of the Department of Medicine and Surgery in the Veterans Administration

OPPORTUNITIES FOR RESIDENCY TRAINING

The Veterans Administration, Washington, D. C, recently announced that the selection of residents and the maintenance of standards of training has been vested in Dean's Committees of the medical schools which are affiliated with the Veterans Administration hospitals Applications should be made directly to these committees, a list of which follows

Veterans' Hospital at:	Chairman of Dean's Committee	Representing Medical Schools of
* San Francisco	Dr Howard C Naffziger University of California Medical School San Francisco 22	California Stanford
* Los Angeles	Dean Burrell O. Raulston University of Southern California Medical School 2551 University Avenue Los Angeles 7	Southern California Medical Evangelists
* Washington, D. C. (Mount Alto)	Dean Walter A. Bloedorn George Washington University School of Medicine 1335 H Street N W. Washington 5, D. C.	George Washington Georgetown
Indianapolis	Dr. Matthew Winters, secretary 23 East Ohio Street Indianapolis	Indiana
Chicago (Hines) (Vaughan)	Dean J Roscoe Miller Northwestern University Medical School 303 East Chicago Avenue Chicago	Illinois Northwestern Loyola
Excelsior Springs, Mo (tuberculosis only)	Dean Harry R Wahl University of Kansas School of Medicine 39th Street and Rainbow Blvd.	Kansas
Louisville, Ky. (Nichols General Hospital)	Dr Arnold Griswold University of Louisville School of Medicine 101 West Chestnut Street Louisville 2, Ky.	Louisville
New Orleans (LaGarde General Hospital)	Dean H W. Kostmayer Tulane University School of Medicine 1430 Tulane Avenue New Orleans	Louisiana State Tulane
* Baltimore (Fort Howard)	Dr. Perrin Long, secretary Johns Hopkins University School of Medicine 710 West Washington Street Baltimore 5	Johns Hopkins Maryland
Boston (West Roxbury)	Dean C. Sidney Burwell Harvard Medical School 25 Shattuck Street Boston 15	Boston Harvard Tufts
Dearborn, Mich.	Dean Hardy A. Kemp Wayne University College of Medicine Detroit 1	Wayne
Minneapolis	Dean Harold S Diehl University of Minnesota Medical School Minneapolis 14	Minnesota
New York (Bronx)	Dean Willard C Rappleye 630 West 168th Street New York 32	Columbia Cornell Long Island Medical College New York University New York Medical College
Oteen, N. C (tuberculosis only)	Dean Wilburt C. Davison Duke University School of Medicine Durham, N C	Duke
White River Junction, Vt.	Dean Rolf C Syvertsen Dartmouth Medical School Hanover, N. H.	Dartmouth
Cleveland (Brecksville)	Dean Joseph T. Wearn Western Reserve University School of Medicine 2109 Adelbert Road Cleveland 6	Western Reserve
Oklahoma City	Dean Wann Langston University of Oklahoma School of Medicine 801 Northeast 13th Street Oklahoma City 4	Oklahoma
* Portland, Ore.	Dean D W. E Baird University of Oregon Medical School Portland 1, Ore.	Oregon
Pittsburgh (Aspinwall)	Dean William S McEllroy University of Pittsburgh School of Medicine Bigelow Boulevard Pittsburgh	Pittsburgh
Nashville, Tenn (Thayer General Hospital)	Dean Ernest W. Goodpasture Vanderbilt University School of Medicine 21st Ave. South at Edgehill Nashville 4, Tenn.	Vanderbilt
Dallas, Texas (Lisbon) (Ashburn General Hospital)	Dean Tinsley R Harrison Southwestern Medical College 2211 Oak Lawn Dallas 4, Texas	Southwestern
Salt Lake City	Dr. H. L Marshall University of Utah School of Medicine Salt Lake City	Utah
Richmond, Va. (McGuire General Hospital)	Dean J P. Gray Medical College of Virginia Richmond, Va	Virginia
Wood, Wis	Dean Eben J Carey Marquette University School of Medicine 561 North 15th Street Milwaukee 3	Marquette
* Topeka, Kan.	Dr. Kurt Menninger Menninger Clinic Topeka, Kan	

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* Neuropsychiatric residencies available

At the present time practically all the hospitals listed offer residency training in internal medicine, general surgery, radiology and pathology. Some of them can also provide training in orthopedics and urology. The respective specialty boards have assured their provisional approval of these programs, but it is to be understood that full accrediting cannot be granted until the plan is in operation and the hospitals have been inspected Training in the subspecialties of internal medicine and the surgical specialties, including ophthalmology and otolaryngology, will be offered wherever it is possible to provide adequate material and qualified supervision It is unlikely that training can be provided in gynecology.

Training in the fields of tuberculosis and neuropsychiatry is also available Several residencies in tuberculosis are indicated, and inquiries concerning other opportunities should be addressed to Dr. John Barnwell, acting assistant director of Tuberculosis Service, Veterans Administration, Washington, D. C. Information concerning training in neuropsychiatry may be obtained from Dr. Daniel Blain, acting assistant director of Neuropsychiatric Service, Veterans Administration, Washington, D. C.

The list of dean's committees includes only those whose organization has progressed to the point where they are ready to accept applications for residencies Additional openings will be available within a short time as the program develops.

DISABLED VETERANS TO TRAIN FOR SKILLED JOBS

Dr. Paul R. Hawley, chief medical director of the Veterans Administration, recently announced the first industrial agreement to train severely disabled veterans in Veterans Administration hospitals for skilled and semiskilled jobs. The Bulova School of Watchmaking, Woodside, L. I., N. Y., will conduct the program under arrangements negotiated by Dr. Donald A. Covalt, acting assistant director of Veterans Administration Medical Rehabilitation, and Stanley Simon, trustee of the Bulova school.

"Severely disabled veterans who have a special aptitude for precision work will be given an opportunity for this training," Dr. Hawley stated. The training course will be tailored to each patient's individual work tolerance, Dr. Covalt said. He added that a veteran may work only an hour a day if that is all the time he can spend at the training without endangering his health.

Although there is no set time for the handicapped veteran to complete the course, Veterans Administration officials said it probably would take about a year; if the veteran does not complete his training while still in a Veterans Administration hospital, he can go to the Bulova School of Watchmaking on Long Island.

The work will be conducted principally in the seven paraplegic or spinal cord injury centers which the Veterans Administration is in the process of setting up or taking over from the Army. However, other severely handicapped veterans will participate in the program.

Approximately 400 paraplegics are in Veterans Administration hospitals at present, but some 1,600 more who are now in army and navy hospitals will be transferred to the Veterans Administration in the near future. The seven centers include five operated by the armed services that will be taken over intact and two Veterans Administration hospitals which have specific facilities for such patients.

These paraplegic centers will be in Framingham, Mass.; New York City (Bronx Veterans Administration Hospital); Richmond, Va.; Memphis, Tenn.; Pittsburgh (Aspinwall Veterans Administration hospital); Chicago, and Los Angeles.

PRIVATE MENTAL HYGIENE CLINICS

The Department of Medicine and Surgery has received inquiries as to whether the Veterans Administration will cancel contracts with private mental hygiene clinics for the outpatient treatment of veterans when the Veterans Administration Mental Hygiene Clinics are organized and functioning. This has resulted in besitancy on the part of some clinics to negotiate contracts.

In respect to these inquiries, it is the policy of the Veterans Administration to continue all such contracts indefinitely, provided the caliber of work justifies their continuation.

SPECIAL CENTER FOR TUBERCULOSIS

Pending expansion of Veterans Administration facilities for the care of tuberculous patients, Moore General Hospital, Swannanoa, N. C., has been designated as a specialty center for tuberculosis. The large number of examinations at separation centers has led to the discovery of cases of tuberculosis at a rate temporarily exceeding the capacity of Fitzsimons and Bruns general hospitals and tuberculosis hospitals of the Veterans Administration.

APPOINTED TO VETERANS ADMINISTRATION

Dr. Karl M. Bowman, professor of psychiatry in the University of California Medical School, San Francisco, has been appointed consultant in neuropsychiatry for Branch 12 of the Veterans Administration. He will supervise neuropsychiatric activities of the Veterans Administration in California, Arizona and Nevada.

APPOINTED HEAD OF VETERANS HOSPITAL AT NEWINGTON, CONN.

Dr. Lewis G. Beardsley was recently appointed head of the Newington Veterans' Facility, succeeding Myer Schwolsky, who will remain in office as manager of the Hartford Regional Office of the Veterans Administration. Dr. Beardsley was formerly manager of the Diagnostic Center in Washington, D. C.

ARMY

COMMISSION APPOINTED TO STUDY PROSTHETIC PROGRESS IN EUROPE

Five army and civilian experts comprising a commission on prosthetic devices will leave Washington soon for a study of European technics in amputation surgery, developments in the field of prosthetics and artificial limbs, and the rehabilitation and reconditioning of amputees. The commission is being sent by Major Gen. Norman T. Kirk, Surgeon General of the Army, at the direction of Secretary of War Patterson. It will visit scientific centers in England, France, Switzerland, Germany, Sweden and possibly Russia. Heading the unit is Col. Leonard T. Peterson, Medical Corps, of Washington, D. C., chief of the amputation and prosthetic unit, Surgeon General's Office. Other members are Dr. Paul E. Klopsteg, director of research at the Northwestern University Technological Institute; Lieut. Col. Robert G. F. Lewis, Ordnance Department of New York City, engineer assigned to the Surgeon General's Office; Lieut. Col. Rufus H. Alldredge, Medical Corps, of New Orleans, chief of the amputation section, England General Hospital, Atlantic City, N. J., and Mr. Edmond N. Wagner of San Marino, Calif., consulting engineer. Dr. Klopsteg is chairman of the Committee on Prosthetics of the National Research Council. Mr. Wagner formerly was chief of the engineer section of the Office of Scientific Research and Development. Technician Third Grade John P. Gavell, Medical Department, of Danbury, Conn., will accompany the group as recorder.

For several months members of the commission have been making preliminary investigations of the latest technics in amputation surgery and developments in prosthetic devices, particularly those developed by German scientists which were unavailable for study during the war.

One of the types of surgery to be investigated is cinoplastic surgery, which involves connection of the activating cords of the artificial limb to the muscles by means of pins made of inert or nonirritating material. The pin is inserted through the skin lined tunnel in the muscle. While this treatment has been used to some extent in treatment of amputees, the commission hopes to find means of improvement to increase the utility of the artificial limb. Research is now conducted which suggests that cinoplastic surgery may be extensively applied in prostheses in the near future.

COMMANDER OF SEVENTH INFANTRY DIVISION'S MEDICAL BATTALION

Capt. Albert Rosner, formerly of Camden, N. J., was recently named commander of the Seventh Infantry Division's medical battalion. For medical work with front line troops he was awarded the combat stars in the Philippine and Ryukyus Island battles and the combat medical badge for Okinawa. Dr. Rosner graduated from Hahnemann Medical College and Hospital of Philadelphia in 1941 and entered the service Aug. 1, 1942.

TILTON GENERAL HOSPITAL COMMENDED

The Meritorious Service Plaque was recently awarded to Tilton General Hospital, Fort Dix, N. J., for the superior manner in which the men's detachment and the three WAC companies discharged their responsibilities. All during the time Tilton Hospital was active the enlisted and WAC units maintained the highest professional standards in the receiving, treating and disposition of patients, and in addition they rendered valuable service in the medical training programs conducted there by the Army.

ARMY AWARDS AND COMMENDATIONS

Captain John R. Bobb

The Bronze Star was recently presented to Capt. John R. Bobb, Lykens, Pa., "for heroic achievement in action in the vicinity of Oberzerf, Germany, on March 13, 1945. Captain Bobb was on reconnaissance patrol in the town when a soldier received a serious sucking wound in the chest. Without regard for his own personal safety, Captain Bobb proceeded alone approximately 100 yards to give the man immediate aid and successfully evacuated him to the aid station for further treatment. Later during an intense artillery barrage Captain Bobb again left shelter to aid men wounded by shell fragments. During the intense fire his aid station was kept in constant operation in spite of a direct rocket hit and, having no assistant battalion surgeon, Captain Bobb personally maintained liaison with his battalion. Captain Bobb's courage and aggressiveness greatly aided in saving the lives of numerous men and to the success of his battalion." Dr. Bobb graduated from Temple University School of Medicine in 1942 and entered the service Aug. 13, 1943.

Colonel Joseph Berkson

The Legion of Merit was recently awarded to Col. Joseph Berkson, Rochester, Minn., head of the Section on Biometry and Medical Statistics of the Mayo Clinic. "As chief of the statistics division, office of the air surgeon, headquarters army air forces," according to the citation, Colonel Berkson "contributed immeasurably to the advancement of medical statistics in developing new methods of presenting and interpreting statistical data as applied to army air force matters. His display of professional skill and high standards of efficiency in disease control contributed to a great extent to the success of the army air forces health programs." Dr. Berkson graduated from Johns Hopkins University School of Medicine, Baltimore, in 1927 and entered the service May 12, 1942.

Major John J. McAleese

John J. McAleese, Pittsburgh, was recently awarded the Legion of Merit for "instituting a comprehensive research program which evolved the 'kleenex-penicillin' treatment for burns, officially recognized as superior to any other treatment known to medical science and particularly successful in tropical climates. This new method resulted in economy of materials, reduced sepsis (infection), it alleviated suffering and expedited healing in numerous cases. Through extensive use of the treatment, hospitalization and lost time were materially shortened." Dr. McAleese graduated from the University of Pittsburgh School of Medicine in 1935 and entered the service July 15, 1942.

Colonel Aubrey Kenna Brown

Col. Aubrey Kenna Brown (retired), McAllen, Texas, was recently awarded the Legion of Merit for the professional and administrative ability which he displayed as commanding officer, Regional Hospital, Camp Swift, Texas, from March 1942 to November 1945. The citation called attention to the fact that "the reconditioning program for return to duty or civil status of convalescent soldiers and the program of training for medical units for overseas service, organized and supervised by Colonel Brown, were particularly valuable and reflected his keen devotion to the welfare of the sick and wounded." Dr. Brown graduated from Bennett College of Eclectic Medicine and Surgery, Chicago, in 1912 and entered the service July 1, 1920.

Captain Richard J. Cross

Capt. Richard J. Cross, New York, was recently awarded the Bronze Star "for meritorious service in connection with military operations against the enemy on Leyte during the Ormoc Bay campaign." Dr. Cross graduated from Columbia University College of Physicians and Surgeons, New York, in 1941 and entered the service Oct. 1, 1942.

Lieutenant Colonel Norman Q. Brill

The Legion of Merit was recently awarded to Lieut. Col. Norman Q. Brill, deputy director of the neuropsychiatry consultants division, Office of the Surgeon General, for his work in "organizing the treatment program for psychiatric patients in convalescent hospitals, one of the notable therapeutic achievements of the Medical Department in this war." The citation further stated that "through superior professional ability, excellent planning and broad experience he initiated numerous significant and highly important policy changes with regard to the salvage of manpower, management of psychiatric casualties and dispositional procedures. His unusual judgment of relative values, keen perspicacity and untiring devotion to duty contributed materially to the achievements of the Neuropsychiatry Consultants Division, reflecting great credit on himself and on the Medical Department." Dr. Brill graduated from the New York University College of Medicine, New York, in 1934, was commissioned in the Army Medical Reserve Corps in June 1934 and went on active duty in April 1941.

Colonel Albert E. McEvers

Col. Albert E. McEvers, commanding officer of Kennedy General Hospital, Memphis, Tenn., was recently awarded the Legion of Merit. According to the citation accompanying the award, "Colonel McEvers, as commanding officer, from March to September 1945, demonstrated exceptional qualities of leadership and administrative ability in supervising an extensive expansion of facilities to take care of a greatly increased patient load. Under his capable direction the work of this hospital in the treatment of all types of overseas casualties was outstanding and reflected great credit on the Medical Department of the Army." As reserve officer, Colonel McEvers served with the Medical Corps in France during the first world war. On his return to the United States in 1918 he was commissioned a major in the Medical Corps of the Officers' Reserve Corps. He was appointed a full colonel in the Reserve Corps in 1934 and again in December 1939, since which time he has been on active duty. Dr. McEvers graduated from the Chicago College of Medicine and Surgery in 1912.

Captain Richard G. Fort

The Bronze Star was recently awarded to Capt. Richard G. Fort, Evanston, Ill., for his work from July 14 to Aug. 25, 1944. According to the citation accompanying the award, "Captain Fort enabled his medical battalion to provide efficient medical service for the sick and wounded of the division, maintaining superior liaison of widely separated subordinate units. Captain Fort often traveled far in advance of the medical battalion to reconnoiter sites for installations, necessitating long rides day and night under trying conditions. His profound knowledge of medical battalion functions and his efficient performance of duties reflect great credit on himself and on the medical corps." Dr. Fort graduated from the University of Illinois College of Medicine, Chicago, in 1939 and entered the service March 31, 1941.

Lieutenant Colonel Charles R. Rein

The Legion of Merit was recently presented to Lieut. Col. Charles R. Rein, New York, who, the citation said, "expanded and developed the serological service of the Army Medical Department while a member of the Army Medical School from November 1942 to October 1945. His establishment of a consultation service expedited investigative studies and the treatment of venereal disease." Dr. Rein graduated from the University of Michigan Medical School, Ann Arbor, in 1928 and entered the service Aug. 12, 1942.

Captain Carl E. Billings

Capt. Carl E. Billings, Barrington, Ill., was recently awarded the Bronze Star for meritorious service performed in combat operations against the enemy in Belgium and Germany during the first part of the year 1945. Captain Billings' services resulted in the saving of many lives which otherwise would have been lost. Dr. Billings graduated from the University of Chicago School of Medicine in 1942 and entered the service July 1, 1943.

Major Raymond J. Byron

Major Raymond J. Byron, Schenectady, N. Y., was recently awarded the Legion of Merit "for exceptionally meritorious conduct in the performance of outstanding services with the Fifth Army." Dr. Byron graduated from Albany (N. Y.) Medical College in 1938 and entered the service June 19, 1942.

MISCELLANEOUS

DR. FLOYD S. MARKHAM AWARDED AMERICAN TYPHUS COMMISSION MEDAL

Floyd S. Markham, Ph.D., of the department of bacteriology of Ohio State University, Columbus, was recently awarded the Army Typhus Commission Medal. He was a member of the Rockefeller Foundation Typhus team which worked with the Army in control of the threatened epidemic in Naples. He was stationed first in North Africa and then in Italy with the Rockefeller group, the Army and the Allied Control Commission, "rendering exceptionally meritorious service in connection with the control of typhus." According to the citation Dr. Markham, following the task in Naples, did considerable research on the vital statistics of the epidemic and compiled valuable scientific data showing the history of the epidemic. "He played an important part in a great modern achievement in preventive medicine," the citation states.

HOSPITALS NEEDING INTERNS AND RESIDENTS

The following hospitals have indicated to the Council on Medical Education and Hospitals that they have not completed their house staff quota allotted by the Procurement and Assignment Service:

INDIANA

St. Joseph Hospital, Fort Wayne. Capacity, 350; admissions, 6,950. Sister M. Geroldine, Superintendent (4 interns; resident—pathology).

Memorial Hospital, South Bend. Capacity, 275; admissions, 9,180. Mr. A. J. Sullivan, Administrator (interns; residents—mixed service, July 1).

KENTUCKY

Jewish Hospital, Louisville. Capacity, 100; admissions, 3,479. Mr. E. D. Witham, Superintendent (resident—mixed service).

LOUISIANA

U. S. Marine Hospital, New Orleans. Capacity, 572; admissions, 6,939. Dr. J. M. Lubitz (resident—Pathology).

MASSACHUSETTS

Wesson Memorial Hospital, Springfield. Capacity, 112; admissions, 3,022. Mr. J. M. Dunlop, Superintendent (intern; residents—mixed service).

NEW JERSEY

Hackensack Hospital, Hackensack. Capacity, 300; admissions, 9,360. Mrs. Mary Stone Conklin, R.N., Superintendent (3 residents—mixed service, July 1, discharged medical officers).

NEW YORK

Deaconess Hospital, Buffalo. Capacity, 344; admissions, 7,010. Mr. Vernon A. Reed, Superintendent (2 interns).

OHIO

St. Luke's Hospital, Cleveland. Capacity, 375; admissions, 10,526. Dr. F. G. Carter, Superintendent (resident—otolaryngology).

TEXAS

El Paso City-County Hospital, El Paso. Capacity, 211; admissions, 2,441, Colonel George W. Cook (U. S. Army, retired), Superintendent (3 interns, July 1).

VIRGINIA

Grace Hospital, Richmond. Capacity, 110; admissions, 4,026. Mr. R. H. Thomas, Managing Director (2 residents—mixed service).

WASHINGTON

Northern Permanente Foundation, Vancouver. Capacity, 360; admissions, 11,087. Dr. J. W. Neighbor, Medical Director (resident—surgery).

WEST VIRGINIA

Wheeling Hospital, Wheeling. Capacity, 270; admissions, 6,287. Sister Mary Ruth, Administrator (interns; residents—mixed service, July 1. Women interns considered).

APPOINTED SURGEON GENERAL OF SELECTIVE SERVICE SYSTEM

Col. Richard Henry Eanes, in addition to his other duties, was recently appointed Surgeon General of the Selective Service System, Washington, D. C. Dr. Eanes graduated from the Medical College of Virginia, Richmond, in 1911 and entered the service July 1, 1920.

UNRRA NEWS

Ask Help in Relieving Shortage of Bread Grains

The director general of the United Nations Relief and Rehabilitation Administration, Herbert H. Lehman, recently appealed to the United Nations Assembly for help in relieving the grave situation arising from the critical world shortage of bread grains, rice and fats.

The director general called attention to steps already taken by the governments of Australia, Canada, the United Kingdom and the United States to improve the situation but declared that, despite these measures, UNRRA thus far has been unable to receive assurance of sufficient supplies to meet even the most urgent needs of the receiving countries for grains and fats.

In a cablegram addressed to Trygve Lie, secretary general of the United Nations Organization, Mr. Lehman asked the assembly to take "such action as may seem fit and as may prompt the supplying countries to increase their exports and the consuming countries to utilize their imports and indigenous supplies in the wisest manner possible." He stated also that he made public appeals to the people of the supplying nations and called for further sacrifices to forestall the tragic fate facing the millions of people in Europe and Asia.

The director general informed the assembly of recommendations which had been made by the UNRRA council's committee on supplies and which included (1) that the governments concerned be urged to reconsider most urgently the decision taken in mid 1945 to remove wheat and flour from international allocation, (2) that the Cereals Committee of the Combined Food Board, in making allocations or programing exports of wheat and flour, take into consideration the extent to which the claimants have followed the example set by UNRRA in making the maximum substitution of other cereals for wheat and (3) that supplying governments make available and intergovernmental allocating agencies recommend allocations of additional quantities of wheat, rice, fats and other foods for countries receiving UNRRA assistance, even though such action may necessitate some further sacrifices.

The director general submitted records to show that allocations of bread grains, rice and fats were entirely inadequate to meet UNRRA's basic requirements.

Czechoslovakian Hospitals Given Medical Supplies

All hospitals and medical institutions in Czechoslovakia recently received their medical supplies from UNRRA. UNRRA now provides 10 per cent of all medical supplies used in Czechoslovakia. The Ministry of Health allocates the UNRRA contribution to medical institutions and supplies pharmacists, who sell to the general public from accumulated reserves or from German stores taken at the time of the May revolution.

The greatest problem in medical supply in Czechoslovakia, it is said, is the shortage of insulin. There are 6,000 persons with diabetes in Bohemia and Moravia who need permanent treatment; they require 8,000,000 units of insulin monthly, but Czechoslovakia manufacturers have facilities to manufacture only 1,000,000 units.

In May 1945 the United Kingdom supplied enough material to permit the manufacture of 10,000,000 units. Since then UNRRA has supplied Czechoslovakia with enough crystallized insulin to enable manufacturers to make 30,000,000 units. A recent agreement with Denmark provides that in exchange for a quantity of pancreas Denmark is to deliver 40,000,000 units to Czechoslovakia. There is enough insulin in the country at present to treat diabetic patients for nine months. The Ministry of Health is working out plans to increase the monthly production of insulin to 5,000,000 units by the time the present reserve is exhausted.

Czechoslovakia, which prior to the war imported most generally known medicines and the raw materials to manufacture them from Germany, is now making efforts to obtain these supplies from firms in England, the United States, Switzerland or France.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Alabama

Di Tata, D., Major, 602 Norman Bridge Rd., Montgomery.
Henderson, Andrew D., Major, 259 St. Francis St., Mobile.
Huey, Thomas F. Jr., Lt. Col., 801 Glenwood Terr., Anniston.
Hunter, John W. Jr., Major, 3412 Montevallo Rd., Birmingham.
Weil, C. K., Major, Rt. 4, Box 343, Cook's Rd., Montgomery.

Arizona

Bate, Thomas H., Lt. Col., 15 E. Monroe Ave., Phoenix.
Kaufman, Jack, Capt., 2711 E. Lee St., Tuscon.
Mills, Charles S., Major, 361 E. Alvarado Rd., Phoenix.
Smith, Leslie B., Lt. Col., Grunow Clinic, Phoenix.
Stanley, John F., Major, 167 E. 3rd St., Yuma.

Arkansas

Blanton, Martin E., Capt., 404 Jefferson, Jonesboro.
Cohen, Louis A., Major, U. S. Vet. Hosp., North Little Rock.
Etter, Roscoe, Lt. Col., Veterans Admin., Fayetteville.
Finney, Charles H., Major, 622 Belle Ave., Ft. Smith.
Hairston, Glenn G., Major, Prescott.
Hanchey, Carl C., Major, DeQueen.
Hassell, Lyle L., Capt., Conway.
Jackson, Ulys, Capt., 412 E. Kentucky St., Blytheville.
Lee, Walter J., Major, 824 Oak St., Hot Springs National Pk.
Lyons, Virgle E., Capt., 118 Franklin St., North Little Rock.
Sheppard, Julius K., Capt., 1111 W. Main St., El Dorado.
Teeter, Brooks R., Major, 803 S. Erie St., Russellville.

California

Abramson, Arthur J., Capt., 356 26th Ave, San Francisco.
Ackert, Joseph W., 1st Lt., Route 1, Box 29C, Atascadero.
Alsberge, Edward W., Major, 1636 Allen Ave., Glendale.
Barnhill, John R., Capt., Kern County Hosp., Bakersfield.
Billingsley, Gordon D., Capt., 406 Orange St., Los Altos.
Chalian, Alexander R., Capt., 2533 Havenscourt Blvd., Oakland.
Coffelt, Ralph W., Lt. Col., 4614 Sunset Blvd., Los Angeles.
Cormia, Frank E., Capt., 450 Sutter St., San Francisco.
Custer, Clarence P., Major, 408 E. Geary St., Stockton.
Hong, Charles J., Capt., 1602 North St., Bakersfield.
Hudson, Charles B., Major, Alameda County Hosp., Oakland.
Lamke, Charles M., Capt., 3706 Oakwood Pl., Riverside.
Layman, John D., Capt., 232 E. Cleveland Ave., Montebello.
Loutzenheiser, John J., Lt. Col., 8 16th Ave., San Francisco.
Mathewson, Carleton, Jr., Lt. Col., 3975 Clay, San Francisco.
Matson, James R., Major, 3604 Granada Ave., San Diego.
Meyer, Morton A., Major, 1373 3rd Ave., San Francisco.
Murphy, Morton J., Major, Redding.
Muskin, Nathan, Major, 420 S. Westlake Ave., Los Angeles.
Newbill, James, Capt., Santa Clara County Hosp., San Jose.
Northway, F. J., Capt., 2266 Vallejo St., San Francisco.
Pearson, Bruce R., Major, 330 E. Olive St., Turlock.
Pendleton, Waldo C., Capt., 727 W. 7th St., Los Angeles.
Richardson, William A., Major, 2010 Lilac Lane, Glendale.
Riechel, Leslie, Capt., 312 N. Boyle, Los Angeles.
Roath, Clinton A., Capt., 3945 Dublin St., Los Angeles.
Robbins, Wilfred T., Capt., Davis.
Rosenberg, Maurice W., Capt., 7022 Sunset Blvd., Los Angeles.
Schumacher, I. C., Lt. Col., 191 Wawona St., San Francisco.
Senter, Walter P., Major, 3119 Jackson St., San Francisco.
Sher, Benjamin H., Capt., 373½ Whittier Blvd., Los Angeles.
Short, John E., Capt., 3740 Northland Dr., Los Angeles.
Skaff, John E., Capt., 470 Columbus St., San Francisco.
Soto-Hall, Ralph, Lt. Col., 2445 Pacific Ave., San Francisco.
Starr, Berthold, 1st Lt., 233 13th St., Manhattan Beach.
Stuhr, Vernon C., Major, 2701 14th Ave., Oakland.
Stephens, Stuart B., Capt., 1624 San Jose Ave., Alameda.
Von Dessonneck, Emil S., 1st Lt., 123 Edgewood, San Francisco.
Ward, Thomas A., Capt., 1130-A Slater St., Santa Rosa.
Warrick, Richard A., Capt., 4237 Fair Ave., North Hollywood.
Westphal, Edward A., Lt. Col., 157 S. Main St., Centerville.
Whitecloud, T. St. G., Capt., 618 Washington Ave., Pomona.
Whittaker, Thomas W., Capt., 1401 S. Hope St., Los Angeles.

Colorado

Gillaspie, John DeW., Capt., 721 Spruce St., Boulder.
Goen, Rayburne W., Major, 1130 Harrison St., Denver.
Gordon, Robert W., Lt. Col., 2051 Eudora St., Denver.
Huddleston, Ora L., Major, 1400 Cook St., Denver.
Kerr, David N., 1st Lt., 1058 13th St., Boulder.
Lipscomb, William R., Lt. Col., 722 High St., Denver.
Pfile, Eugene F., Major, Trinidad.
Robinson, Murray E., Capt., 811 Mapleton, Burlington.

Connecticut

Balletto, Vincent, Capt., 535 Thompson Ave., East Haven.
Barber, Richard R., Capt., 125 Holmes Ave., Glenbrook.
Blumenthal, Edward J., Capt., 153 Division St., Ansonia.
Boyd, Robert B., Capt., 188 Long Hill Road, Wallingford.
Bruno, Joseph J., Capt., 505 Whalley Ave., New Haven.
Deming, Edward G., 1st Lt., 15 Bainbridge Rd., West Hartford.
Di Lorenzo, Albert T., Capt., 213 Easton Ave., Waterbury.
Friedman, Samuel, Capt., Fairfield State Hosp., Newtown.
Herrmann, Albert E., Lt. Col., 142 Robinwood Rd., Waterbury.
LaPierre, W. W., Capt., 431 Washington St., Norwichtown.
Littwin, R. J., Capt., Southbury Training School, Southbury.
Merriman, Henry, Capt., Watertown.
Rindge, Norman P., Capt., 20 Commerce St., Clinton.
Slater, Morris, Capt., 1100 Dixwell Ave., Hamden.
Stetson, Harold P., Capt., RFD 1, College Hgy., W. Cheshire.
White, Robert M., Major, 1995 Chapel St., New Haven.
Wiepert, William M., Major, PO Box E 5, Avon.

Delaware

Cannon, Norman L., 1st Lt., 1341 Gilpin Ave., Wilmington.
Davolos, Joseph J., Major, 1705 W. 4th St., Wilmington.
Giles, Junius A., Major, 806 Blakshire Rd., Wilmington.
Hudson, Floyd I., Major, Rehoboth Beach.
Scull, Carl B., Capt., 2 N. Bradford St., Dover.

District of Columbia

Farber, David J., Capt., 142 Upsal St., S.E., Washington.
Fischer, R. H., Capt., 1722 Varnum St., N.W., Washington.
Grass, Edward J., Col., 3700 Mass. Ave. N.W., Washington.
Miller, W. S., Major, 1131 W. Va. Ave., N.E., Washington.
Robins, Albert I., Capt., 1443 Kennedy St. N.W., Washington.
Tauber, Abraham, Capt., 534 Newcomb, S.E., Washington.

Florida

Elam, James O., Capt., 1481 N.W. 36th St., Miami.
Funkenstein, Dan H., 1st Lt., 2121 Redfern Rd., Jacksonville.
Goodwin, Hugh B. Jr., Major, 205 Arcarde Bldg., Ft. Pierce.
Hodson, Edward E., Capt., 661 N.W. 3rd St., Miami.
Ingram, Hollis C., Capt., 722 E. Concord, Orlando.
Oetjen, George F., Major, 211 E. Forsyth St., Jacksonville.

Georgia

Campbell, James L. Jr., Major, 1315 Fairview Rd. N.E., Atlanta.
Collins, Clyde M., Capt., 205 Green St., Gainesville.
Futch, Thomas A. Jr., Capt., 414 Upchurch Bldg., Thomasville.
Garner, Walter R., Lt. Col., 380 N. Green St., Gainesville.
Gibboney, Harry S. Jr., Capt., 80 Huntington Rd., Atlanta.
Herault, Pierre C. Jr., Major, 373 Ninth St. N.E., Atlanta.
Kilpatrick, Charles McC., Major, Forest Hills.
Leskin, Louis W., Capt., 710 E. 35th St., Savannah.
Moore, John W. Jr., Capt., 508 Union St., LaGrange.
Ricketson, Robert A. G., Capt., Broxton.
Rosenstock, Charles, Capt., 1126 St. Charles Pl., Atlanta.
Rumble, C. T., Capt., 352 Martin St., S.E., Apt. 688, Atlanta.
Seaman, Henry A., Lt. Col., 802 Brunel St., Waycross.
Wolff, Bernard P., Lt. Col., 48 Peachtree Pl., N.E., Atlanta.

Illinois

Allen, Robert A., Major, 1710 Orrington Ave., Evanston.
Anthony, Paul K., Capt., 6010 S. Ashland Ave., Chicago.
Arbogast, John L., Major, % Mrs. W. H. Arbogast, 211 W. Seminary, Bloomington.
Avakian, Vaughn A., Capt., 11006 S. Michigan Ave., Chicago.
Bowman, Harry R., Capt., 200 E. Bloomingdale Rd., Itasca.
Bowman, Howard O., Capt., San Jose.
Clark, Clif L., Capt., Onarga.
Collins, John J., Capt., 2100 Lincoln Park West, Chicago.
Drabanski, J. S., Capt., 6500 W. Irving Park Blvd., Chicago.
Ewald, William L., Capt., 2025 North Ave., Waukegan.
Fein, Harry S., Major, 1648 S. Springfield Ave., Chicago.
Feldman, Emanuel, Capt., Michael Reese Hosp., Chicago.
Field, Homer B., Major, 2376 E. 71st St., Chicago.
Fond, Israel, Capt., 4938 N. Washtenaw Ave., Chicago.
Frank, Louis S., Capt., 128 S. Central Ave., Chicago.
Grippe, William J., Capt., 619 N. Monticello Ave., Chicago.
Grzybowski, Stanley T., Capt., 5501 Cullom Ave., Chicago.
Hughes, Charles E., Capt., 4418 Parker Ave., Chicago.
Hurwitz, Ben L., Capt., 6329 Cuyler Ave., Chicago.
Hybke, Zenon S., Capt., 860 Bucklin St., LaSalle.
Judah, Leopold N., Capt., 510 S. Edwin St., Champaign.
Kleitsch, William P., Capt., 4210 N. Francisco Ave., Chicago.

PHYSICIANS SEPARATED FROM SERVICE

Illinois—Continued

Krakow, Clarence S., Capt., 1326 Lunt Ave., Chicago.
Lerner, David, Capt., 501 Surf St., Chicago.
Le Sage, Robert T., Capt., 227 W. Chamberlain, Dixon.
Levis, William P., Capt., 1845 S. Walnut St., Springfield.
Litterst, Lawrence J., Capt., 129 S. Eleanor Pl., Peoria.
McCuskey, John M., Major, 333 Fulton St., Peoria.
May, Percy C., Capt., 502 N. Locust St., Centralia.
Miller, Donald S., Major, 101 S. Parkside, Chicago.
Norbury, F. G., Col., Norbury Sanatorium, Jacksonville.
Olson, Elmer J., Capt., 731 E. 90th Pl., Chicago.
Parsons, Harold H., Capt., 2385 29th St., Moline.
Peterson, Paul G., Lt. Col., 8701 Rockefeller Ave., Hollywood.
Richmond, Samuel I., Capt., 224 N. Pine Ave., Chicago.
Roberts, Earl L., Capt., Cissna Park.
Roseborough, A. S., Capt., Woodland Lane, R.R. 4, Rockford.
Rosen, Davis, Capt., Marshall.
Rosenblum, Arthur H., Major, 7007 Oglesby Ave., Chicago.
Ross, Edward Y., Capt., Cabery.
Scott, Wilbert E. Jr., Major, 1117 N. Dearborn St., Chicago.
Sellett, Leonard V., Capt., 1368 Cartress St., LaSalle.
Shabat, Louis W., Capt., 6041 N. Talman Ave., Chicago.
Shapiro, Louis B., Major, Manteno State Hosp., Manteno.
Sharp, John R., Capt., West Madison St., Girard.
Soukup, Victor J., Capt., Chestnut.
Spellberg, Mitchell A., Major, 5240 Harper Ave., Chicago.
Spomer, John P., Capt., 822 E. 44th St., Chicago.
Stoll, John E., Major, 9 S. Kedzie Ave., Chicago.
Stotz, Kenneth F., Capt., 212 N. Latrobe Ave., Chicago.
Susser, Maxwell H., Capt., 1112 Pratt Blvd., Chicago.
Swan, Franklin D., Capt., Minonk.
Sweeney, Leo Patrick A., Col., 9453 S. Ashland Ave., Chicago.
Turner, Marion A., Capt., 302 S. Emma, Christopher.
Van Atta, Roger A., Capt., 539 2nd Ave., Ottawa.
Vorisek, Elmer A., Major, 1041 Lyman Ave., Oak Park.
Wall, Harry C., Capt., 8233 S. Marshfield, Chicago.
Weiler, Kenneth J., Capt., 2210 N. 77th Ct., Elmwood.
Young, James M., Capt., Orion.
Zelezinski, Leo A., Capt., 4728 S. Wolcott, Chicago.

Indiana

Balsbaugh, George K., Capt., 106 N. Elm St., North Manchester.
Barnett, Ernest R., Major, 1926 N. 8th St., Terre Haute.
Baskett, Russell J., Capt., 408 S. Main, Jonesboro.
Blatt, Adolph E., Capt., 2502 W. Michigan St., Indianapolis.
Bloom, Asa W., Major, 219 Spencer Ave., Marion.
Caplin, Samuel S., Capt., 228 44th St., Indianapolis.
Chattin, Vance J., Capt., 514 E. Main St., Washington.
Crandall, Martha L., Capt., 212 W. Pine St., Princeton.
Dickson, Dale D., Major, Letts.
Dillinger, George R., Major, 306 S. Maple St., French Lick.
Dodds, James U., Capt., 227 W. Main, Hartford City.
Fry, Robert DeV., Major, Hotel Harrison, Indianapolis.
Green, Geo. F., Lt. Col., 1515 E. Wayne St., S. Bend.
Greer, Oliver W., Col., 3050 Park Ave., Indianapolis.
Halleck, Harold J., Lt. Col., 417 S. Riverside Dr., Winamac.
Harden, Murray E., Capt., Covington.
Hattendorf, Anton P., Major, 4041 Old Mill Rd., Ft. Wayne.
Held, George A., Major, 1451 Mill St., Jasper.
Jones, Charles A., Capt., 397 N. Main, Franklin.
Kelly, Don E., Capt., 4927 Kenwood Ave., Indianapolis.
Kirtley, J. M., Major, 1101 W. Wabash Ave., Crawfordsville.
Kuhn, Raymond V., Capt., 1302 S. Henderson St., Bloomington.
Lamber, Chester K., Major, 3510 Guilford, Indianapolis.
Lane, William H., Capt., 125 W. Marion St., South Bend.
Millikan, William J., Capt., 2620 E. 59th St., Indianapolis.
Morrison, George G., Capt., 504 W. Race St., Portland.
Reed, Roger R., Capt., 205 W. 12th St., Anderson.
Sheek, Kenneth I., Capt., 491 Euclid St., Greenwood.
Test, Charles E., Major, 42 W. 43d St., Indianapolis.
Tipton, William R., Capt., 203 Northwood Blvd., Greencastle.
Toumey, Fred L., Capt., Indianapolis City Hosp., Indianapolis.
Warn, William J., Capt., Milan.
Yunker, Philip E., Major, 2418 Lincoln Ave., Evansville.
Zwick, Harold F., Major, 104 E. Rugg St., Decatur.

Iowa

Bezman, Harry S., Capt., Traer.
Bowers, Clifford V. B., Capt., 13½ Central Ave. N. W., Le Mars.
Chambers, J. W., Major, 1312 Equitable, 604 Locust, Des Moines.
Ganzhorn, Harold L., Capt., Mapleton.
Garlinghouse, Robert O., Lt. Col., State U., Hosp., Iowa City.
Gloeckler, B. B., Capt., 504 E. Washington St., Mt. Pleasant.
Gordon, Arnold M., Capt., 4406 Greenwood Dr., Des Moines.
Grossman, Milton D., Capt., 1715 Nebraska St., Sioux City.

Iowa—Continued

Healy, Maurice J., Capt., 1420 4th St., Boone.
Hill, Don E., Capt., 203 Tucker Bldg., Clinton.
Knoll, Albert H., Major, 909 Rhomberg Ave., Dubuque.
McGarvey, Neil J., 1st Lt., 1026 W. 4th St., Waterloo.
Shellito, John G., Capt., % Mrs. J. C. Shellito, Independence.
Smith, Robert A., Capt., Miners Hospital, Albia.
Trussell, Ray E., Major, 409 Grand Ave., Iowa City.
West, Alroy G., Capt., 169 Keeline Ave., Council Bluffs.
Weyer, Joseph J., Capt., Lohrville.
Wilke, Frank A., Capt., Woodward.

Kansas

Brethour, Leslie J., Capt., 636 W. 5th St., Junction City.
Cloyes, Arthur P., Major, 411 S. Denver St., El Dorado.
Griffin, Jack B., Major, 1321 Broadway, Leavenworth.
Gsell, George F., Major, 3707 Victor Pl., Wichita.
Hendrickson, George C., Lt. Col., Lebanon.
Horejsi, Alfred J., Capt., Ellsworth.
Hyndman, Henry H., Capt., 1042 Porter, Wichita.
Lee, George R., Capt., Yates Center.
Reeves, Eugene A., Capt., 1211 Hoel Parkway, Kansas City.
Scales, William McV., Major, 1920 N. Jefferson, Hutchinson.

Kentucky

Begley, Philip J., Capt., Hyden.
Bizot, William H., Capt., 3409 W. Broadway, Louisville.
Blackburn, Winfrey P., Lt. Col., Frankfort.
Brummett, Chester C., Capt., 304 N. 24th St., Middlesboro.
Cable, Thomas M., Capt., Fincastle.
Caldwell, Charles W. Jr., Capt., Danville.
Cox, David M., Lt. Col., 2701 Lexington Rd., Louisville.
Diacovo, Michael, Capt., 143 St. James St., Kingston.
Dillard, Harry K., Major, 1326 Winchester Ave., Ashland.
Goldstein, Joseph L., Major, 1932 W. Main St., Louisville.
Jones, Marshal M., Major, 425 Georgetown St., Lexington.
McLean, Charles G., Major, 220 Queenway Dr., Lexington.
Wheeler, Carl L. Jr., Capt., 326 Sycamore Rd., Lexington.
Williams, Walter F., Major, Mayo Arcade, Ashland.
Yancey, Charles R., Lt. Col., 206 W. 15th St., Hopkinsville.

Louisiana

Balding, Willard V., Capt., 6032 Patton, New Orleans.
Blandino, Vincent P., Capt., 5400 Gen. Diaz, New Orleans.
Boles, William M., Major, 1430 Tulane Ave., New Orleans.
Campbell, Edmond C., Capt., 320 N. 3d St., Monroe.
Cohen, Stanley, Lt. Col., 39 Papworth Ave., Metairie.
Gillaspie, Robert E., Capt., 35 Versailles Blvd., New Orleans.
Glassberg, E. J., Maj., 805 Pere Marquette Bldg., New Orleans.
Goldberg, Max M., Capt., 2300 Joseph St., New Orleans.
Hair, Morris J., Lt. Col., Lecompte.
Harlow, John R., Capt., Jonesboro.
Hood, Connie I. Jr., Capt., 1056 Prospect St., Shreveport.
King, Charles M. J., Capt., 105 Behan St., Nachitoches.
Lescale, Maurice, Major, 3514 Canal St., New Orleans.
Mullins, Julius H., Major, 2161 Wisteria St., Baton Rouge.
Schwarzenbach, M. P., Major, 307 Delaronde St., New Orleans.
Snatic, Harry S., Major, Route 3, Scafies Rd., Lake Charles.

Maine

Dunham, Carl E., Capt., 201 State St., Portland.
Gormley, Eugene G., Capt., Market St., Houlton.
Pomerleau, Rodolphe J. F., Capt., 13 Spring St., Waterville.
Thomas, William B. S., Major, Main St., Dover-Foxcroft.

Maryland

Delawter, DeWitt E., Capt., 29 W. Church St., Williamsport.
Ginsberg, Milton, Capt., Mt. Wilson Sanatorium, Mt. Wilson.
Lankford, Arthur Jr., Capt., 101 Upnor Rd., Baltimore.
Schenthal, J. E., Major, 4010 Liberty Hgts. Ave., Baltimore.
Shear, Meyer R., Capt., 2911 Spring Hill Ave., Baltimore.
Swiss, A. G., Capt., S. Baltimore G. H., 1213 Light, Baltimore.
Teitelbaum, Harry A., 1st Lt., 1411 Eutaw Pl., Baltimore.
Yeaman, John H., Capt., 239 Camden Ave., Salisbury.
Zimmerman, Loy M., Capt., 2858 Harford Rd., Baltimore.
Zupnik, Howard L., Major, 427 Hopkins Rd., Baltimore.

Massachusetts

Bozigian, Haig, Major, Somerville.
Bragger, James K., Lt. Col., 397 Newton St., Chestnut Hill.
Chafetz, Max, Capt., 116 Norfolk St., Dorchester.
Chamberlin, Donald T., Major, 605 Commonwealth Ave., Boston.
Cleary, Robert Vincent, Capt., 41 Pine St., Belmont.
Coen, William B., Capt., 57 Forest Park Ave., Springfield.
Colman, Joseph H., Capt., 39 S. Main St., Mansfield.
Corbin, George C., Capt., 34 Williams St, Roxbury.

PHYSICIANS SEPARATED FROM SERVICE

Massachusetts—Continued

Corson, Harold F, Lt Col, Yale Hill Road, Stockbridge
Cutler, E C, Brig. Gen, Peter Bent Brigham Hosp, Boston.
Del Campo, Dante, Capt, 66 Rogers Ave, Lynn
Desmond, Leo R, Major, 1272 Brook Rd, Milton
Dutton, Robert, Major, 33 Avon St, Wakefield
Feingold, Myer, Capt, 159 Salem St, Malden
Garber, Jesse G, Capt, 26 Willow Crescent, Brookline
Goldham, Herbert, Capt, 811 Western Ave., Lynn
Gottschalk, R. G, 1st Lt, 103 Longwood Ave, Brookline.
Graffin, Allan L, Lt Col, 141 Longwood Ave, Brookline
Hayes, Donald R, Major, Westfield State Sant, Westfield
Hoffman, Alvin A, Capt, 115 Ormond St, Mattapan
Holland, Robert M, Major, 1985 Centre St, West Roxbury
Hunt, Sheldon L, Capt, Cape Cod, Cataumet
Huntington, Benjamin L, Capt, 9 Gloucester St, Boston.
John, Ralph C, Major, Vet Hospital, Rutland Heights
Jordan, Frank J, Capt, 188 Pleasant St, Stoughton
Kaplan, Daniel, 1st Lt, 1006 Pleasant St, Worcester
Keedy, Christian, Capt, 119 Belmont St, Worcester
Kelley, Thomas F, Capt, 104 Franklin St, Brookline.
King, Myron N, Capt, 10 King St, Dorchester
Kowalski, Joseph V, Major, 67 South St., Ware
Kreidberg, Marshall B, Capt, 68 Topliff St., Dorchester.
Kunkel, P, Major, 25 Shattuck St, Boston
Lambert, Edward C, Capt, 97 Binney St, Boston
Lanman, Thomas H, Col, 95 Suffolk Rd, Chestnut Hill
Lanou, *William W, Major,* 44 Andover St, *Pittsfield*
Levine, Samuel, Major, 40 Harwood St, Lynn
Levine, Sidney A, Major, 406 Main St, Melrose
Malewitz, Edward C, Capt., 330 Brookline Ave, Boston
Park, Irving H., Capt, 677 Washington St, Brookline
Petravice, Peter P, 1st Lt, 25 Burt St, Adams
Ronka, E K F, Col, 46 S Central Ave, Wollaston, Quincy
Sands, Herman C, Capt, 8 Astoria St, Mattapan
Seale, Earl S, Major, 108 Bay State Rd, Boston
Sikorski Stanley S, Capt, 121 Deane St, New Bedford
Snow, Robert G, Capt, 25 Park Ave, Winchester
Sullivan, Henry F, Capt, 144 Church St Whitinsville
Tate, John C Major, 20 Maple St, Springfield
Vernon, Hollis E, Major Falmouth
White, Samuel E, 1st Lt, 453 Railroad Ave North Andover
Yankopolus, Konstantine G Capt, 31 Edna St New Bedford
Yee, Lester B K, Major, Mass Gen Hosp, Boston

Michigan

Beck, Karl H, Major, 11846 Wilshire, Detroit
Beckwitt, Morris, Major, 1071 Van Dyke Ave, Detroit
Blodgett, William H, Major, 2218 Iroquois Ave, Detroit.
Burnside, Howard B, Capt, 514 E Kearsley St, Flint
Cahalan, Joseph L, Capt, 2316 Biddle Ave, Wyandotte
Carnes, Harry E, Major, 16935 Evanston, Detroit
Carver, Gordon B., Capt, 401 N Sherman St Bay City
Clinton, George R, Capt, 339 E Oak St, Mason
Clyne, Benjamin C, Capt, 363 Park Ave Yale
Davis, Lionel L Capt, 220 N Kinney, Mt Pleasant
Deurloo Henry W, Capt, 130 Tillson St, Romeo
Dick, Mark W, Major, 644 Plymouth Blvd, Grand Rapids
Dillahunt, Jack A, Major, 1421 Delaware, Apt 309, Detroit
Eder, Joseph R, Capt, 1250 Chicago Blvd, Detroit
Gaba, Howard B, Capt, 17300 Woodingham, Detroit
Gilfillan, Edwin O, Major, 806 Court St, Sault Ste Marie
Gloss, Kenneth E, Major, 4412 Superior Ave Crystal Falls
Hendren, Owen S, Major, Williamston
Holman, Herbert H, Major, 19985 Warrington Dr, Detroit
Holst, John B, Major, 1023 Francis St, Jackson
Hooker, Donald H, Major, 7424 Poe Ave, Detroit
Kaleta, Edward J, Capt, 2216 Pierce, Flint
Kerr, Howard J, Capt, 1441 Lake Shore Dr, Muskegon
Lane Sidney, Capt, Berrian Co Hosp., Berrian Center
La Rue, Robert E, Major, 7437 Churchill Ave, Detroit
Lerner, David, Capt, Au Gres
Luger, Frederick E, Capt, 2112 Gratiot Ave, Saginaw
Lusk, Harry A, Major, 1450 Washington Heights Ann Arbor
Meade, Robert J, Capt, 810 Williams St, Jackson
Mercer, Walter E, Capt, 909 Glenhaven, East Lansing
Moe, Arnold S Capt 35104 Michigan Ave., Wayne
Moleski J V, Capt, 306 Diamond Ave, N E, Grand Rapids
Podolsky Harold M, Capt 2053 Pingree Ave, Detroit
Rague, Paul O, Major, 302 Jackson St, Manchester
Rietern k Gerald H, Capt, 2424 S Park St, Kalamazoo
Root, Charles T, Major, 90 Collingwood Ave, Detroit
Ro n Isadore I, Capt, L'Anse

Michigan—Continued

Rosenthal, Louis H, 1st Lt, 2509 Blaine, Detroit
Rosenthal, Samuel, Capt, 4268 Buena Vista, Detroit
Slagh, Milton E, Capt, Box 265, Saranac
Sofen, Morris B, Capt, 715 Montrose, Kalamazoo
Somers, D C, Major, 362 McKinley, Grosse Pointe Farms, Grosse Pointe
Strand, Martin E, Capt., 3330 Wiscasset, Dearborn
Summers, William A, Capt, 15035 Grandview Ave, Detroit
Waldron, Alexander M, Major, 1701 Hill St, Ann Arbor

Minnesota

Balfour, William M, Major, 810 10th St, S W, Rochester
Benton, Jaul C, Major, Gibbon
Bowers, Robert N, Capt, Lake City
Bradshaw, F J Jr, Lt Col, 105 Wilson Ave S E, St Cloud
Brown, Philip W, Lt Col, 729 6th St S. W, Rochester.
Campbell, Donald C, Capt, 327 14th Ave S W, Rochester.
Clarke, James Y Jr, Capt, 818 Curfew Ave, St Paul.
Closuit, Frederick C, Major, 371 Wilson St, Winona
Drexler, George W, Capt, Long Prairie
Frisch, David C, Capt, 241 Jackson St, Anoka
Hall, George H Jr, Major, 4908 2nd Ave S, Minneapolis
Hart, Vernon L, Lt Col, 2507 Lake Pl, Minneapolis
Hogan, Clifford W, Capt, Kensington
Hoyer, Ludolf J, Capt, Windom
Johnson, Malcolm R, Lt Col, 311 Pine St, Red Wing
Kanealy, John F, Capt, 2908 45th Ave S, Minneapolis
Lillehei, Clarence W, Major, 4601 Wooddale Ave, Minneapolis
Milnar, Frank J, Capt, 412 Otis Ave, St Paul
Strom, Gordon W, Major, % Mayo Clinic, Rochester.
Trow, James E, Capt, 6 E. Diamond Lake Rd, Minneapolis
Vadheim, Lewis A, Capt, Tyler
Willson, Donald M, Capt, 1508 1st St, N W, Rochester.
Wise, Ralph W E, Major, Mayo Clinic, Rochester.
Wold, Lester E, Capt., 1417 W. Center St, Rochester.
Younger, Lewis I, Capt., 269 Winona St, Winona

Mississippi

Bush, Eugene A, Major, 15th St, P O Box 567, Laurel
Curry, Hugh K, Capt, Eupora
Dorris, Henry C, Lt Col, Winona
Ellison, Eugene T, Capt, 613 Moore St, Greenville
Goodman, Sanders A, Major, 209 Arnold Ave, Greenville
Ross, Theophilus E, Lt Col, 416 Bay St, Hattiesburg

Missouri

Cope, Josef S, Lt Col, 128 S 11th, Lexington
Frerking, Herbert W, Capt, Alma
Glaser, Joseph L, Capt, 7042 Maryland Ave, St Louis
Goodman, LeRoy, Major, 700 Ward Pkwy, Kansas City.
Griffith, George W, Capt, Garden City
Huber, Tyron E, Lt Col, 3616 Castleman, St Louis
Kallenbach, Glen P, Capt, Washington Univ, St Louis
Kelley, Robert W, Major 4961 Laclede St Louis
Kirtz, Louis P, Capt 3866 S Spring, St Louis
Kotner, Irvin A, Capt, 5630 Pershing, Apt 404, St Louis
Kranson, Seymour J, Major, 604 W. Maple Ave, Independence.
Krebs, Joseph M, Capt, 1325 S Grand Blvd, St Louis
LaForce, Richard F, Major, 1127 S Garrison, Carthage.
Marks, Mark M, Capt, 5217 Charlotte St, Kansas City.
Mohr, George D, Capt, St Mary's Hospital, St Louis
O Reilly, Daniel E, Capt, 6369 Pershing Ave, University City.
Powers, John R, Lt Col, St Louis Children's Hosp, St Louis
Robinson, Joseph, Capt, 3651 Blaine St, St Louis
Siceluff, Joseph G, Capt, 200 E Pershing, Springfield
Smith, Dudley R, Major, 834 N Biltmore, Clayton
Tillman, W W Jr, 1st Lt, 4462 Forest Park Ave, St Louis.
Vandiver, Virgil D, Capt, Chillicothe
Williams, Bill H, Capt, Joplin

Montana

Biehn, Ralph H, Capt, 1133 N 29th St, Billings
Brooke, Charles P, Capt, Harrison
Campbell, Robert M, Major, 612 N Benton Ave, Helena
Morrison, James D, Capt, 622 N 29th St, Billings

Nebraska

Brazer, John G, Major, 1809½ N 49th Ave, Omaha
Deakin, Thomas W, Major, 216 S 41st St Omaha
Johnson, Robert W, Major, 1818 S 23d St., Lincoln
Ketter, William D, Major, 2019 Lane St, Falls City
Kilgore, William S, Major, 915 Blackburn Ave, York.
Kruml, Joseph G Lt Col, Ord
Shreck, Horace W, Lt Col, N 5 Park Dr, Holdredge.

PHYSICIANS SEPARATED FROM SERVICE

Nebraska—Continued

Trobough, George E., Lt. Col., 2236 Jones St., Omaha.
White, Charles M., Capt., Sutherland.
Wyrens, Raymond J., Major, 2001 N. 55th St., Omaha.

Nevada

Cantlon, Edwin L., Major, 329 7th St., Sparks.

New Hampshire

Branson, John H. Jr., Major, St. Paul's School, Concord.
Bremner, Robert M., Major, 106 Notre Dame Ave., Manchester.
Lavoie, Lionel D., Capt., 1235 Elm St., Manchester.
Mulaire, Victor J., Capt., Highland St., Hooksett.

New Jersey

Austin, Thomas R., Capt., 4 Tulip St., Cranford.
Black, Maskell B., Capt., 128 E. High St., Glassboro.
Branon, Mark E., Capt., 16 W. Passaic Ave., Rutherford.
Christoph, Francis T., Major, 483 Prospect St., Maplewood.
Conan, Neal J. Jr., 1st Lt., 6 Apollo St., Jersey City.
Cornwell, Alfred L., Capt., 265 N. Laurel St., Bridgeton.
Cox, Jack E., Capt., 16 Cambridge Rd., Westmont.
D'Imperio, Francesco, Capt., 411 Cooper St., Camden.
Fitzhugh, William F., Major, 190 Euclid Ave., Ridgefield Park.
Gilson, Benjamin I., Capt., 1395 E. 19th St., Brooklyn.
Golden, William M., Capt., 236 W. Milton Ave., Rahway.
Gutmann, Erwin K., Major, 3258 Hudson Blvd., Jersey City.
Heminway, Norman L., Col., 40 Grove St., Somerville.
Hirsch, Solomon, Capt., 109 Van Wagenen Ave., Jersey City.
Knapp, William A., Capt., 152 Halstead St., East Orange.
Kupper, William H., 1st Lt., 275 Paulison Ave., Passaic.
Loder, Horace B., Capt., 225 E. Commerce St., Bridgeton.
Mandel, Sidney N., 1st Lt., 107 33d St., Union City.
Martin, Theodore, Capt., 577 Lincoln Ave., Glen Rock.
Murphy, George E., Major, 197 Paxton St., Paterson.
Nathanson, Norman, Major, 179 Broadway, Long Branch.
Notkin, Meyer, Major, 559 Broadway, Paterson.
Piasecki, Chester A., Capt., 741 E. 23rd St., Paterson.
Pinto, Joseph A., Capt., 50 N. 11th St., Newark.
Probst, Everett W., Major, 14 E. Park Pl., Rutherford.
Schirber, Rene G., Capt., 11 Kirkpatrick St., New Brunswick.
Santangelo, Vito F., Capt., 20 King St., New York.
Sherman, Samuel H., Major, 81 Elmora Ave., Elizabeth.
Simeone, Peter A., Capt., 138 Clerk St., Jersey City.
Spivack, David, Capt., 315 W. Jersey St., Elizabeth.
Stanford, Henry J., Major, 1 Broad Parkway, White Plains.
Stein, Joseph M., Lt. Col., 404 Boyd St., Camden.
Sufrin, Emanuel, Major, 119 N. 27th St., Camden.
Svenson, Sven E., Capt., 515 Sanford Ave., Newark.
Weeks, Belford A., Capt., 534 S. Shore Rd., Absecon.
Weiss, Alvah M., Major, 14 Craig Pl., North Plainfield.
Wentzell, James E., Lt. Col., 5 E. Mantua Ave., Wenonah.
Western, Frederic B., Capt., Knollwood Rd., Short Hills.
Wiren, William E., Capt., 105 W. 8th St., Bayonne.
Wurzel, Milton, Capt., 295 Hunterdon St., Newark.

New Mexico

Evans, Leland S., Major, 1020 Hess Terr., Las Cruces.
Follingstad, Alvin H., Capt., Springer.
Glasier, William A., Lt. Col., 612 Riverside Dr., Carlsbad.
January, Harold L., Lt. Col., 215 S. Richmond, Albuquerque.
Lander, Ernest W., Capt., 208 S. Missouri, Roswell.

New York

Altieri, Anthony J., Capt., 2279 University Ave, New York.
Altman, Harold, Capt., 565 W. End Ave., New York.
Amar, Dolores B., Capt., RFD 1, Box 493A, Seaford.
Amidon, Blaine F. Jr., Capt., 113 West Ave., East Syracuse.
Andolina, Carmelo T., Capt., 78 N. Main St., Mount Morris.
Andronaco, Joseph M., Capt., 131 Riverside Dr., New York.
Angelo, Charles A., Major, Madison Park Hosp., Brooklyn.
Anker, Frank, Capt., 1402 Avenue K, Brooklyn.
Arak, Charles, Capt., 3121 54th St., Woodside, L. I.
Artsis, Nathan, Major, Bellmore Ave., North Bellmore.
Avin, J. Capt., Hotel Beacon, 75th & Broadway, New York.
Blick, Michael S., Major, 29 W. 64th St., New York.
Blier, Julius S., Capt., 555 Crown St., Brooklyn.
Bluestone, Leon, Capt., 1721 Bath Ave., Brooklyn.
Cardany, George Jr., Capt., 2 Couch St., Plattsburg.
Carruthers, Roderick J., Capt., RFD 3, Syracuse
Castrovinci, Frederick, Capt., 3357 75th St., Jackson Heights.
Cavuoti, Michael A., Capt., Northern Blvd., Greenvale, L. I.
Charlton, George P., Capt., 1391 Madison Ave., New York.
Cheifitz, Abraham, Capt., 709 Van Siclen Ave., Brooklyn.
Clements, James J., Capt., 322 Lake Ave., Rochester.

New York—Continued

Codik, John G., Capt., 464 E. 159th St., New York.
Cohen, Harold, Capt., 648 Empire Blvd., Brooklyn.
Cohen, Max M., Major, 8735 Bay Parkway, Brooklyn.
Coletti, Cataldo J., Capt., 601 W. 174th St., New York.
Collins, Vincent P., Capt., 630 W. 168th St., New York.
Colmore, Henry P., Lt. Col., Byram Lake Rd., Mt. Kisco.
Conti, Vincent S., Capt., 2137 83d St., Brooklyn.
Coppersmith, Harold H., Capt., 1535 E. 18th St., Brooklyn.
Cornacchia, Louis T., Capt., 7010 Seminole Ave., Forest Hills.
Cowen, Mortimer I., Lt. Col., 811 Cortelyou Rd., Brooklyn.
Coyle, Francis R., Lt. Col., 472 Woodward Ave., Buffalo.
Cramer, Arthur J. Jr., Capt., 864 Colvin Ave., Kenmore.
Cudmore, John T. P., 1st Lt., 216 E. 39th St., New York.
Cushing, V. D., Capt., U. Hosp. of the Good Shepherd, Syracuse.
Cutler, Condict W. Jr., Col., 135 W. 76th St., New York.
Cymerman, Henry, Capt., 258 McKinley Ave., Brooklyn.
Cytryn, Max E., Capt., 4309 40th St., Long Island City.
Degan, John A. Jr., Capt., 1515 Genesee St., Utica.
De Hoff, John B., Capt., 299 Riverside Dr., 4 A, New York.
Derrico, Nicholas, Capt., 1957 Ellis Ave., Bronx.
De Vita, Joseph R., Capt., 213 Adelphi St., Brooklyn.
Diamond, Sidney, Capt., 164-16 89th Ave., Jamaica.
Dodge, Lynn Q., Major, 11 Pleasant St., Fairport.
Donald, Howard A., Major, 122-21 142d Pl., South Ozone Park.
Dunne, Lawrence J., Capt., 150 S. Middle Neck Rd., Great Neck.
Elder, Charles K., Major, RD 5, Oswego.
Farber, Harry, Major, 201 Foster Ave., Brooklyn.
Fenton, Alan H., Capt., 80 Elwood Ave., Mt. Vernon.
Ferber, D. M., Capt., Hudson River State Hosp., Poughkeepsie.
Ferrer, Jose M. Jr., Major, 1075 Park Ave., New York.
Fischer, Irving C., Capt., 239 Central Park West, New York.
Fishbein, Herbert A., Capt., 2626 King's Highway, Brooklyn.
Fisher, Wilbur J., Major, 130 Colvin Ave., Buffalo.
Forman, Charles, Capt., RD 2, Box 111, Catskill.
Forst, Arthur, Capt., 550 W. 157th St., New York.
Francomano, Pasquale J., Capt., 763 E. 224th St., New York.
Frank, David L., Capt., 133-28 226th St., Laurelton, L. I.
Freiman, Israel S., Capt., 230 W. 79th St., New York.
Friedman, Gerald J., Major, 773 E. 176th St., New York.
Glasser, Sidney M., Capt., 234 Greenwich St., Hempstead.
Goldberg, Bernard, Capt., 235 Larchmont Ave, Larchmont.
Greenberg, Morris E., Capt., 269 Graham Ave., Brooklyn.
Gruenbaum, Max, Capt., 3875 Waldo Ave., Bronx.
Gureasko, Henry J., Capt., 1780 E. 13th St., Brooklyn.
Gutman, Eleanor B., Capt., 48 W. 85th St, New York.
Harris, Lloyd D., Major, 16 Garfield Pl., Poughkeepsie.
Hauer, Emanuel, Capt., 200 E. 16th St, New York.
Hauptmann, David M., 1st Lt., 54 E. 176th St., Bronx.
Healy, Thomas M., 1st Lt., 35 Wendover Rd., Yonkers.
Heenan, Edmund R., Capt., 3 Clydon Rd., Garden City, L. I.
Hendricks, Robert T., Capt., 129 Lexington Ave., New York.
Hitschmann, Otto B., Capt., 112 W. 86th St., New York.
Howe, Martha E., Capt., 901 Lexington Ave., New York.
Humphreys, Gustavus A., Major, 310 E. 75th St., New York.
Husser, Horace F., Capt., 18 Cruser Pl., Rockville Center.
Inciardi, James A., Major, 2415 Beverly Rd., Brooklyn.
Itkin, Irving H., Capt., Mt. Sinai Hosp, New York.
Jacobson, Morton A., Capt., 97 Bruce Ave., Yonkers.
Janowsky, C. C., Major, 221-12 Hartland Ave., Queens Village.
Jason, Alvin D., Major, 1 W. 74th St., New York.
Juchli, Rene H., Lt. Col., 175 Guy Park Ave., Amsterdam.
Kaplan, Henry J., Capt., 18 S. Main St., Spring Valley.
Kastoff, David, 1st Lt., 85 McClellan St., New York.
Katz, Jacob F., Major, 110 W. 94th St., New York.
Kay, Saul, Capt., 1318 Franklin Ave., Bronx.
Kernan, Francis M., Major, 150 E. 50th St., New York.
Kilmann, Martin, Capt., 522 W. End Ave., New York.
Kleefield, Elmer A., Major, 108-33 71 Ave., Forest Hill.
Kreuz, Paul J., Capt, 1044 Kenmore Ave, Buffalo.
Kroff, William, Capt., 222 E. 32nd St., New York.
Leass, Reuben, Capt., 34-19 Edgemere Ave., Edgemere.
Lee, James T., 1st Lt., 622 W. 168th St., New York.
Leigh, Ted F., Major. 400 E. 50th St., New York.
Leuthner, John G., Capt., 2305 University Ave., Bronx.
Levine, David, Major, 1741 Union St., Brooklyn.
Levy, Harold H., Capt., 246 W. End Ave., New York.
Levy, Joseph, Capt., 232 Oxford Rd., New Rochelle.
Lewis, Benjamin, Capt., 5 Grand Blvd., Binghamton.
Libin, Isaiah E., Capt., 1855 Monroe Ave., New York.
Lipson, Milton, Capt., 5 Main St., Ft. Plain.
London, Daniel, Capt., 2375 Ocean Ave., Brooklyn.
Lowenthal, Milton, Major, 321 E. 17th St., New York.
Lozner, Joseph, Capt., 3065 Grand Concourse, New York.
Magocsi, Alexander W., Capt., 1906 Ditmars Blvd., Astoria.

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

Mandelbaum, Joseph, Capt., 258 Henry St., Brooklyn.
Mangiardi, Joseph L., Capt., 103-25 123 St., Richmond Hill.
Mann, Jay D., Major, 1084 Madison Ave., Albany.
Manuta, Carl, Capt., 1341 54th St., Brooklyn.
Margulies, Harry L., Capt., 2039 Gleason Ave., Bronx.
Melant, Joseph H., 1st Lt., 1247 Electric Ave., Lackawanna.
Meyer, Harry, Capt., 27 Ludlow St., Yonkers.
Miller, Leo R., Lt. Col., 145 Vermilyea Ave., New York.
Moran, Charles E., Major, 1866 Niagara Ave., Niagara Falls.
Moskowitz, Harry, Capt., 4100 43rd Ave., Long Island City.
Mulholland, Herbert F., Major, 536 B 22d St., Far Rockaway.
Muller, Harold G., Capt., Main St., Cato.
Neidich, Ezra K., 1st Lt., Yonkers.
Nemiroff, Israel, Capt., 4402 12th Ave., Brooklyn.
Nenner, George, Capt., 1816 Harrison Ave., Bronx.
Neuhardt. Charles W., Capt., 108-38 70th Ave., Forest Hills.
Neuren, Emanuel A., Capt., 299 Crown St., Brooklyn.
Newbold, Robson S., Capt., 94 Woodlawn Ave., New Rochelle.
Newman, Charles M., Capt., 209 Bay 34th St., Brooklyn.
Newman, Louis I., Capt., 133-01 230th St., Laurelton.
Nichols, Leonard E., Capt., 1301 N. Salina St., Syracuse.
Northrup, Robert R., Capt., 56 N. Protage St., Westfield.
Owens, William W., Capt., 175 Garfield Pl., Brooklyn.
Palmer, James N., Capt., 1213 Court St., Utica.
Patterson, Donald S., Major, Kings County Hosp., Brooklyn.
Phillies, Eustace G., Capt., 204 Hodge Ave., Buffalo.
Pickar, Gabriel, Capt., 1700 President St., Brooklyn.
Pool, James L., Major, 535 E. 72d St., New York.
Prowda, Theodore J., Major, 475 Sherrill Rd., Sherrill.
Pruce, Arthur M., Capt., 7920 4th Ave., Brooklyn.
Puerner, Joseph W., Major, 332 Walden Ave., Buffalo.
Rappoport, Arthur E., Major, 26 E. Ave., Caledonia.
Reese, Paul H., Capt., 352 Senator St., Brooklyn.
Reitz, Russell E., Capt., 1048 E. Ferry St., Buffalo.
Rennie, William, Major, 684 Linwood Ave., Buffalo.
Ricklin, Joseph, Capt., 581 Powell St., Brooklyn.
Robertelli, Henry C., Capt., 8524 10th Ave., Brooklyn.
Robinson, John W., Capt., 18 Woodworth Ave., Yonkers.
Romano, Paul S., Capt., 2550 University Ave., Bronx.
Rosen, Frank L., 1st Lt., 670 W. End Ave., New York.
Rosenberg, Meyer, Capt., 7040 Colonial Rd., Brooklyn.
Rosenfeld, Herbert, Capt., 139-67 Pershing Crescent, Jamaica.
Rothman, Herman, Capt., 79 Rhodes St., New Rochelle.
Rowe, Percy S., Major, 192-63 Hollis Ave., Hollis.
Rubenstein, George, Capt., 425 Swan St., Dunkirk.
Rudnick, Julius, Major, 260 E. 91st St., Brooklyn.
Ryan, Arland D., Capt., Sodus.
Sampliner, Robert B., Capt., Bellevue Hospital, New York.
Schmoyer, Sheron A. A., Capt., 461 Riverdille Ave., Yonkers.
Schonberger, Joseph W., Capt., 163 E. Boardwalk, Long Beach.
Schultze, Paul Jr., Major, 339 State St., Albany.
Schuyler, James B., Capt., 308 New Scotland Ave., Albany.
Schwartz, Murray N., Capt., 1158 Boynton Ave., New York.
Secor, Ralph C., Capt., 151 Benson St., Albany.
Seidemann, Irving, Major, 1480 Popham Ave., Bronx.
Seiffer, Bertram H., 1st Lt., 1362 Grand Concourse, New York.
Sergis, Mooshy, Capt., 1326 Riverside Dr., New York.
Settineri, John, Capt., 192 Fall St., Seneca Falls.
Sherman, Joseph, Capt., 3 Butler Ave., Buffalo.
Sherman, William B., Lt. Col., 60 E. 58th St., New York.
Shiner, Irving S., Major, 884 W. End Ave., New York.
Shnayerson, Edward F., Capt., 659 Linden Blvd., Brooklyn.
Shulman, Bernard H., Major, 1239 Avenue S, Brooklyn.
Silberstein, Edward L., Capt., 4901 14th Ave., Brooklyn.
Singer, Max, Capt., 2545 Valentine Ave., New York.
Sisca, Anthony V., Major, 237 Purchase St., Rye.
Sklar, Leo J., Capt., 2230 Cornaga Ave., Far Rockaway.
Skyer, Joseph R., 1st Lt., 877 Broadway, Newburgh.
Smith, George Y., Capt., 1751 67th St., Brooklyn.
Sohn, Louis, Capt., 456 E. 3d St., Brooklyn.
Soloway, David, Capt., 84 Eastern Ave., Ballston Spa.
Soltz, William B., 1st Lt., 1171 Elder Ave., Bronx.
Spector, Frederick, Major, 473 Eastern Parkway, Brooklyn.
Speer, Charles A., Capt., 5 Prospect Pl., New York.
Spinelli, Anthony N., Capt., 309 E. 116th St., New York.
Stacy, Harold G., Capt., 2133 70th St., Brooklyn.
Stahl, Albert E., Capt., 188-01 Liberty Ave., Hollis, L. I.
Stein, Benjamin M., Major, 465 Fulton Ave., Hempstead.
Stein, Hymen D., Capt., 69-10 Yellowstone Blvd., Forest Hills.
Stern, Edward A., Capt., 1501 E. Ave., Rochester.
Stern, Eli J., Lt. Col., 317 W. 93rd St., New York.
Stiefel, Frederick H., Major, 1900 Quentin Rd., Brooklyn.
Stillman, Sylvan M., Capt., 110 Riverside Dr., New York.

New York—Continued

Stone, Neil C., Lt. Col., 69 Montgomery St., Poughkeepsie.
Sulmonetti, William B., Lt. Col., 1815 Palmer Ave., Larchmont.
Tarr, Leonard, Major, 144 E. 90th St., New York.
Taylor, Earl S., Major, 1435 Lexington Ave., New York.
Thomas, Lowell I., Lt. Col., 5101 39th Ave., Long Island City.
Tollefsen, Harry R., Major, 1410 York Ave., New York.
Tompkins, Victor N., Major, 516 Madison Ave., Albany.
Trick, Harold W., Capt., 80 John St., Akron.
Turner, Thomas E., Capt., 104 Ashworth Pl., Syracuse.
Udkow, Samuel, Capt., 1134 W. Farms Rd., Bronx.
Van Slyke, Karl K., Capt., 21 Sycamore St., Bronxville.
Veremakis, Constantine, Capt., 32-62 61st St., Woodside.
Vitelli, Joseph A., 1st Lt., 243 Nassau St., Brooklyn.
Vogel, Sidney, Capt., 87 Grand St., Croton-on-Hudson.
Vorisek, Robert E., Capt., 660 W. 180 St., New York.
Walsh, J. S., Maj., Saratoga Inn, Broadway, Saratoga Springs.
Weaver, William J. Jr., Capt., 14 Adams Pl., Delmar.
Wechsler, Herman, Capt., 2865 University Ave., Bronx.
Weinberg, Marvin, Capt., 174 Waverly Pl., New York.
Weinberg, Milton S., Capt., 80-03 192nd St., Jamaica.
Weingarten, Milton F., Capt., 65 E. 96th St., New York.
Weisman, Joseph C., Major, 109 80th Rd., Kew Gardens.
Weiss, Samuel A., Lt. Col., 1109 Park Pl., Brooklyn.
Weseley, Harry B., Capt., 902 Lincoln Pl., Brooklyn.
Wessell, Elmer, Capt., Point View Terr., Plattsburgh.
Wetrich, Raymond M., Capt., 26 VanCott Ave., Hempstead.
Wheeling, Kenneth J., Capt., 15 E. Main St., Port Jervis.
Widmann, Marcus, Capt., 1448 Vyse Ave., Bronx.
Wing, Wilson M., Major, 16 E. 11th St., New York.
Wohl, Charles S., Capt., 46 Linden Blvd., Brooklyn.
Wolf, Stewart G. Jr., Major, 525 E. 68th St., New York.
Wolgel, Milton I., Capt., 124 E. 176th St., Bronx.
Woodrow, Jack H., Major, 80 Hilltop Acres, Yonkers.
Yasser, Isidore, Capt., 1945 Davidson Ave., Bronx.
Zaino, Costantino, Capt., 309 Bedford Park Blvd., Bronx.
Zeichner, Sidney, Capt., 181 Rockway Parkway, Brooklyn.
Zeilengold, Milton, Capt., 440 E. 138th St., New York.

North Carolina

Cloninger, Kenneth L., Major, Conover.
Cogdell, David M., Lt. Col., 230 Old St., Fayetteville.
Currie, Daniel S. Jr., Col., Parkton.
Dorsett, Fletcher I., Capt., 417 Julian Ave., Thomasville.
Duck, Walter O., Capt., Asheville.
Goley, Willard C., Col., Graham.
Griggs, Boyce P., Capt., 2108 Vail Ave., Charlotte.
Hammond, Alfred F., Capt., Grifton.
Harmon, Raymond H., Major, Boone.
Henry, Hector H., Major, Court House, Durham Health Dept., Durham.
Horack, Harold M., Major, 2021 Sprunt St., Durham.
Hunter, William B., Major, Lillington.
Plummer, David E., Lt. Col., 1102 Virginia Ave., Durham.
Rosenbaum, Maurice M., Major, Shallotte.
Summers, John D., Capt., Route 6, Statesville.
Wall, George R., Capt., Siler City.
Wall, R. L. Jr., Capt., 2208 Buena Vista Rd., Winston-Salem.
Wilkins, Gordon M., Major, 105 E. Bright St., Kingston.

North Dakota

Griffin, Vernon M., Major, 302 S. 4th St., Grand Forks.
Hawn, Hugh W., Major, 126 S. 9th St., Fargo.

Ohio

Allen, Samuel, Capt., 733 Bradshaw Ave., East Liverpool.
Amstutz, Hubert M., Major, 132 N. High St., Lancaster.
Anzinger, Frank W., Capt., 621 S. Tanglewood Dr., Springfield.
Arons, Abraham, Capt., 7729 Superior Ave., Cleveland.
Ash, Clarence E., Major, Route 2, Marietta.
Atkinson, W. H. Jr., Capt., 1035 Harmony St., Youngstown.
Bean, William B., Major, General Hosp., Cincinnati.
Buchman, Joseph A., Major, 3314 Elland Ave., Cincinnati.
Chambers, William R., Capt., 7255 Reading Rd., Cincinnati.
Cowdery, Kenneth H., Capt., Chaska Beach, Huron.
Creamer, David M., 1st Lt., 3706 Tallman Ave., Bellaire.
Cress, Orlando E., Capt., 626 S. Elm, Van Wert.
Crone, P. C., Major, 4111 W. 189th, Fairview Village, Cleveland.
Englander, Howard H., Capt., 1088 Carlyon Rd., East Cleveland.
Ferguson, Edward E., Major, 93d at Euclid, Cleveland.
Finkelmeier, Louis J., Capt., 3497 Fine St., Cincinnati.
Fusco, Patrick J., Major, 322 Genesee Ave., Warren.

Ohio—Continued

Gitman, William H., Capt., 1108 Salem Ave., Dayton.
Goetz, John P., Capt., 26 Dodge Ave., Akron.
Graham, John H., Capt., RFD 2, Brunswick.
Guarnieri, Frank G., Capt., 315 Fairmont, Warren.
Hamilton, Gerald W., Capt., 759 Perkins Park Dr., Akron.
Hazel, Woodrow S., Capt., 2556 McGuffey Rd., Youngstown.
Johnston, Robert L., Major, 3847 Superior Ave., Silverton.
Jones, Paul H., Lt. Col., Stockdale.
Kalmon, Morris, Major, 46 Aqueduct St., Akron.
Kelker, John R., Major, 19242 Coffinberry Blvd., Fairview.
King, Harry E., Major, 60 Wyoming St., Dayton.
Ley, Gordon R., Capt., RFD 2, Middle Point.
McCormick, James E., Major, 461 Luck Ave., Zanesville.
McGraw, Elmer A., Capt., 311 Main St., Toronto.
McKinley, Charles E., Major, 47 N. Main St., Camden.
Messina, John, Capt., 8217 Rosewood Ave., Cleveland.
Miller, Frederick H., Lt. Col., 118 Rockwood Ave., Dayton.
Miller, Ralph H., Major, 6257 Roger's Park Pl., Cincinnati.
Mohr, Truman J., Major, 228 Mill St., Lockland.
Moorman, Thomas A., Capt., 627 Kenwood Ave., Dayton.
Morgan, Chester A., Capt., 333 N. Jefferson St., Van Wert.
Mutschmann, Paul N., Lt. Col., 1180 Maywood Ave., Warren.
Newport, Norsuda M., Major, 807 Laurel Ave., Zanesville.
Piser, Alfred L., Capt., 519 W. Norman Ave., Dayton.
Radecki, Joseph A., Capt., 2842 Elm St., Toledo.
Roszmann, Marvin H., Capt., RFD 1, Morral.
Sharon, Isadore C., Capt., 3846 Reading Rd., Cincinnati.
Sherrer, Edward L., Lt. Col., 20070 Frazier Dr., Rocky River.
Slomer, Norbert F., Capt., 524 Ludlow Ave., Cincinnati.
Snyder, Robert D., Lt. Col., 252 Hadley Ave., Dayton.
Speier, Aaron S., Capt., 2245 Emerson Ave., Dayton.
Sperry, Donald R., Capt., 124 N. 33rd St., Newark.
Staton, Harvey J., Capt., 133 E. Central Ave., West Carrollton.
Stephens, Vernon D., Major, 70 W. Woodruff Ave., Columbus.
Wayman, Thomas B., Major, 3578 Monteith Ave., Cincinnati.
Weller, Lawrence W., Capt., 427 Madera Ave., Youngstown.
Wellmeier, Hugh, Major, 412 N. Wayne St., Piqua.
Wilcoxon, George M., Capt., 2121 Shunk Ave., Alliance.
Wilderom, Morris, Capt., 603 E. Liberty St., Medina.
Willis, Willis H., Col., 227 Liberty St., Painesville.

Oklahoma

Bohlman, Wilbur F., Capt., 821 N. Noble, Watonga.
Bush, Jordan M., Capt., 827 N. E. 20th, Oklahoma City.
Donovan, Mark H., Capt., 1213 N.W. 38th St., Oklahoma City.
Hughes, Horton E., Major, 15 E. Drummond, Shawnee.
Kennedy, Virgil N., Major, 106½ S. Main, Newkirk.
Kernek, Clyde, Lt. Col., 210 N. Gulf St., Holdenville.
Lindsey, Ray H., Capt., 722 N. Ash St., Pauls Valley.
Lindstrom, W. C., Lt. Col., 119 N. Broadway, Oklahoma City.
Little, John R., Major, 701 N.W. 40th, Oklahoma City.
Lytle, William R., Major, 813 Wilson Ave., Seminole.
Rogers, Galen A., Lt. Col., San Rur Station, Talihina.

Pennsylvania

Conley, John J., Major, 313 Rowland Ave., Carnegie.
Cottrell, James E., Lt. Col., 6100 W. Oxford St., Philadelphia.
Dvorchak, George E., Capt., 608 S. 3d Ave., Patton.
Fliegelman, Maurice T., Major, 6433 N. Broad St., Philadelphia.
Herley, Paul J., Capt., 309 Chestnut St., Coatesville.
Jamison, Edgar L., Major, 22 Rosedale Ave., Greenville.
Jones, Eurfryn, Major, 2515 Market St., Camp Hill.
Kroungold, Milton L., Capt., 2150 N. Front St., Philadelphia.
Likoff, William, Major, 6117 Carpenter St., Philadelphia.
Matzko, Michael J., Capt., 1145 2nd Ave., Berwick.
McCabe, Edward S., Capt., 69 E. Church St., Lock Haven.
McGovern, Edward B., Capt., 554 Washington Ave., Carnegie.
McTear, Thomas F., Capt., 2423 W. Lehigh Ave., Philadelphia.
Medwick, Joseph X., Major, 123 Marshall St., Lancaster.
Metzgar, Thomas I., Major, 45 N. 7th St., Stroudsburg.
Minteer, James W., Major, 505 Hyde Ave., Ridgeway.
Myers, Martin A., Capt., 1018 W. Moyamensing, Philadelphia.
Renzulli, Francis J., Capt., 407 W. Shelten Ave., Philadelphia.
Rittenhouse, Emory A., Major, 1612 Bailey Ave., McKeesport.
Robinson, Joseph, Capt., Camac & Lindley Ave., Philadelphia.
Ronis, Bernard J., Major, 7141 Elmwood Ave., Philadelphia.
Rosen, Samuel C., Lt. Col., 1928 Pine St., Philadelphia.
Rosner, Isador K., Capt., 5759 Pine, Philadelphia.
Rosset, Ephriam M., Capt., 3107 W. Diamond St., Philadelphia.
Schwab, John E., Capt., 7310 N. Walnut Lane, Philadelphia.
Shannon, Dean R., Capt., 1490 Greenmont St., Dormont.
Sigmond, Henry I., Lt. Col., 1101 W. Lehigh Ave., Philadelphia.
Smith, Henry L. Jr., Capt., Pennsylvania Hosp., Philadelphia.
Sobell, Harry, Capt., 4637 Walnut St., Philadelphia.

Pennsylvania—Continued

Stein, Alfred B., Major, 61 E. Mowry, Chester.
Summons, Howard J., Capt., 117 Windsor St., Reading.
Sutton, Robert L., Lt. Col., 194 Lincoln Ave., Pittsburgh.
Swift, John E., Lt. Col., 145 S. Main St., Scranton.
Tracy, Henry M., Capt., 301 W. 7th St., Chester.
Wells, Charles Robert E., Capt., 1201 3rd Ave., New Brighton.
Whildin, James Griffith, Major, 252 E. Patterson St., Lansford.
Willard, Samuel B., Capt., 95 E. State St., Doylestown.
Wirts, Charles W. Jr., Lt. Col., 2017 Delancey St., Philadelphia.
Yahraus, William P., 1st Lt., 439 N. Duke St., Lancaster.
Zox, M. L., Major, Jewish Hosp., at Tabor Rd., Philadelphia.

Rhode Island

Angelone, Carmine T., Capt., 872 Park Ave., Cranston.
Baronian, Durtad R., Capt., 686 Cranston St., Providence.
Botvin, Morris, Major, 1 Lillian Ave., Providence.
Dawson, Percival G., Capt., 211 Howell St., Providence.
Drew, Robert W., Capt., Warren.
Giles, William P., Capt., 37 S. Angell St., Providence.
Keegan, George A., Capt., 378 Park Pl., Woonsocket.
Rice, Richard, Capt., R. I. Hospital, Providence.
Superfisky, Paul P., 1st Lt., 15 Mansion St., Pittsburgh.

Tennessee

Allen, Robert J., Capt., 203 E. F. St., Elizabethton.
Ball, Albert L., Major, Midland Ave., Memphis.
Edwards, Elbert E. Jr., Capt., Bells.
Evans, Milton L., Capt., 706 S. Mansfield St., Memphis.
Gotwald, David K., Lt. Col., Vanderbilt Hosp., Nashville.
Graves, John H., Major, 2019 Union Ave., Memphis.
Grubb, Glenn D., Major, 2906 E. 5th, Knoxville.
Hamilton, James J., Capt., Church Hill.
Jones, Albert M., Capt., 1145 Madison Ave., Memphis.
Odom, Eugene P., Capt., Route 6, Murfreesboro.
Sayers, Joseph H., Major, Hillsboro Rd., Nashville.
Sullivan, William A., Lt. Col., 2318 West End Ave., Nashville.
Taylor, Alva R., Capt., Humboldt Hgy., Jackson.
Tripp, Alvin B., Capt., 2057 Hallwood Dr., Memphis.
Waring, Thomas L., Col., 869 Madison Ave., Memphis.
Wilson, Harwell, Lt. Col., 346 N. McLean Blvd., Memphis.
Woodson, Howell D., Capt., Baptist Hospital, Memphis.
Wooley, Clifton W., Capt., 541 Prescott St., Memphis.
Wylie, Paul E., Major, Bemis.

Texas

Bourdon, Lynn L., Major, 2315 Watts, Houston.
Calderoni, Francisco F., Capt., 1144 Washington St., Brownsville.
Crawford, Ralph C., Capt., 104 Fauna St., Houston.
DeBord, Bert A. Jr., Capt., 902 S. 7th St., Temple.
Dimmitt, Dean P., Major, 225 W. Cypress St., San Antonio.
Epstein, Isadore M., Major, 1218 Mills Bldg., El Paso.
Evans, Charles W. Jr., Major, Fastrill.
Freed, Harold, Major, 5804 Swiss Ave., Dallas.
Frobese, Alfred S., Capt., 1408 Hardouin Ave., Austin.
Gray, Willis J., Major, Moulton.
Griffin, Harold E., Capt., 800 Avenue B, Galveston.
Halpin, Frank W., Lt. Col., 5101 Bryce Ave., Ft. Worth.
Herrod, James H., Capt., 408 W. 15th St., Austin.
Hooks, Jim M. Jr., Capt., 1181 Sayles Blvd., Abilene.
Hotchkiss, DeWitt H. Jr., Lt. Col., 618 Branard St., Houston.
Ivey, Hubert T., Lt. Col., Veterans Admin., Legion.
Jaworski, Hannibal L., Col., 701 Amicable Bldg., Waco.
Jinkins, A. J., Capt., 5101 Ave. S½, Galveston.
Jones, Elmer K., Capt., Wellington.
Kaminsky, Peter B., Capt., 3517 Fairmount, Dallas.
Koch, Alvis A., Major, Ingleside.
Leeper, Edward P., Lt. Col., 4218 McFarlin, Dallas.
Logsdon, Charles Philip C., Capt., Palo Pinto.
Lowrey, Ernest E., Capt., 1204 College St., Gatesville.
Lyday, Victor I., Major, 3406½ Swiss, Dallas.
Middleton, Edwin E., Capt., 942 Elmwood Dr., Abilene.
Primer, Benjamin M., Col., 919 W. 29th St., Austin.
Readinger, Ivan H., Lt. Col., 3308 Memphis St., El Paso.
Rosenbloom, J., Capt., Broaddus.
Sheddan, Frank G. Jr., Major, Sinclair Bldg., Ft. Worth.
Shipp, John R., Major, Cransfills Gap.
Spiller, William F., Lt. Col., 206 Medical Bldg., Galveston.
Yeager, Franklin W., Capt., 414 Cole Blvd., Corpus Christi.
Zink, Linus A., Major, Pecos.

Wyoming

De Kay, Emory W., Capt., 209 Grand, Laramie.
Fitzgerald, Richard P., Capt., 1048 S. Lincoln, Casper.
Halsey, Guy M., Capt., 208 Clark St., Laramie.

ORGANIZATION SECTION

Council on Medical Service and Public Relations

MEETING OF FEBRUARY 13 AND 14, 1946

The meeting of the Council on Medical Service and Public Relations was called to order by the chairman, Dr. E. J. McCormick, Toledo, Ohio, in the Council office, American Medical Association, Chicago.

Council members present were Dr. Olin West, Headquarters; Dr. A. W. Adson, Rochester, Minn.; Dr. James R. McVay, Kansas City, Mo.; Dr. R. L. Zech, Seattle; Dr. Louis H. Bauer, Hempstead, L. I., N. Y.; Dr. Walter B. Martin, Norfolk, Va.; Dr. T. A. McGoldrick, Brooklyn, and Dr. Joseph S. Lawrence, Washington, D. C.; Mr. Thomas A. Hendricks, secretary, and Mr. George W. Cooley, assistant.

Others present during part of the meeting were Dr. Carl Peterson, Secretary, Council on Industrial Health; Dr. A. J. Offerman, president, Nebraska Medical Service, Omaha; Dr. F. L. Feierabend, secretary, Surgical Care, Inc., Kansas City, Mo.; Dr. F. F. Borzell, vice speaker, House of Delegates, American Medical Association, Philadelphia; Mr. Jay Ketchum, executive vice president, Michigan Medical Service, Detroit; Mr. MacCahal, executive secretary, American College of Radiology, Chicago, and Mr. J. W. Holloway Jr., Director, Bureau of Legal Medicine and Legislation, Chicago.

Report on Associated Medical Care Plans, Inc.—Mr. Jay Ketchum gave an account of the meeting on Tuesday, February 12, attended by fifty representatives of various prepayment medical care plans. It was explained that, as a result of the joint executive committee meeting of the Board of Trustees and the Council on Medical Service and Public Relations held Jan. 11, 1946, the officers of the Medical Service Plans Council of America had called a meeting of plan representatives to discuss a possible reorganization of this group. At this meeting held on February 12 a revised constitution and by-laws was drawn up and adopted under the new name of Associated Medical Care Plans, Inc. The officers of the association were instructed to proceed immediately with incorporation in the state of Illinois. The purpose of this new group as stated by Mr. Ketchum and Dr. Feierabend is to act as a clearing house for certain types of administrative information for the plans themselves, to assist the plans in obtaining some uniformity in their contracts and to work with the Council on Medical Service and Public Relations in coordinating and encouraging existing plans and assisting in the development of plans where they do not now exist.

Under the proposal, Associated Medical Care Plans, Inc., is to be directed by a commission of not less than thirteen and not more than twenty persons. The majority of this commission must be members of the American Medical Association, three of whom shall be members of the Council on Medical Service and Public Relations.

Discussion resulted as to the need for such an organization as Associated Medical Care Plans, Inc. Several Council members expressed the opinion that it merely duplicated the functions of the Council and that the responsibility for this work lay on the American Medical Association rather than on an outside organization. Assurance was given, however, that Associated Medical Care Plans, Inc., is to be an organization of administrators only, to assist one another in detailed administrative work and to assist the Council on Medical Service and Public Relations in the overall job of coordinating existing plans and developing new plans.

In executive session the Council discussed the relationship between Associated Medical Care Plans, Inc., and the American Medical Association.

Suggested standards for the acceptance of prepayment medical care plans and the standards of acceptance for prepayment medical care plans were discussed and approved as amended. These standards are to be used by the Council to grant the official seal of the Council to such plans as qualify within the standards set forth.

Recommendations to the Board of Trustees.—The following statement was prepared for the joint meeting of the Council on Medical Service and Public Relations and the Board of Trustees to be held February 14.

"The Council on Medical Service and Public Relations recommends the employment of a Director of its Division of Prepayment Medical Care Plans and the necessary staff. It also is recommended that the Council appoint an Advisory Committee representing medical care plans and their associations.

"The Council has determined standards for medical care plans, a copy of which is attached. Plans which meet these standards shall be entitled to the use of the Council Seal during the period of their approval.

"The Director of the Division of Prepayment Medical Care Plans of the Council on Medical Service and Public Relations with his staff and with the assistance and cooperation of the Advisory Committee, the state medical societies and Associated Medical Care Plans, Inc., shall be available to assist in developing plans, increasing the number of persons covered by already existing plans and facilitating reciprocity among them.

"The Council believes that responsibility for the development of medical care plans rests with state and county medical societies. Stimulation, coordination and the federation of such plans under the instructions of the House of Delegates is deemed to be the function of the Council on Medical Service and Public Relations and the Board of Trustees of the American Medical Association.

"The duty of the Advisory Committee shall be to advise the Director of Prepayment Medical Care Plans and the Council on the methods of implementing the program and, on approval of the Council, the Director of Prepayment Medical Care Plans will undertake the functions described in paragraph 3.

"The Advisory Committee shall consist of five members, appointed for one year. For the first year it is suggested that the following comprise the committee: Mr. Jay Ketchum, Dr. F. L. Feierabend, Dr. Herbert Bauckus, Mr. William Bowman and Mr. Charles Crownhart.

"A tentative cost of this program is estimated at $50,000 for the first year."

The Council also brought to the attention of the Board of Trustees the following proposals originally made to the executive committee of the Board of Trustees on January 11:

"1. A letter to the plans now in operation explaining the program of the Council and asking for specific information and data as a preliminary report and requesting suggestions as to future regular reports.

"2. Release of a monthly news letter on prepayment plans' activities to which all plans be invited to submit news items and articles.

"The use of such space as is necessary in THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION to set forth pertinent and interesting information of the prepayment medical plans.

"3. Publication of an official roster of medical society sponsored and approved plans, including pertinent information on each.

"4. The adoption of a common symbol or trade mark for the use of the medical societies sponsored and approved plans.

"5. The establishment of an Advisory Service within the Council on Medical Service and Public Relations to provide speakers and technical advisers in relation to matters of organization and administration for county and state medical societies in the formation of plans, such speakers and advisers to be designated by the Council on Medical Service and Public Relations."

Several of these items are already being carried out, and steps are being taken to carry out the others. The Council proposed that the following additional recommendations be approved as part of the program:

1. Establishment of a public relations and press division of the Council on Medical Service and Public Relations to supply the national press through the present A. M. A. Public Relations Department with specific items and stories concerning the various plans for prepayment care, both on national and on local levels.

2. Preparation of literature, speeches, and so forth for representatives on the Council.

3. Preparation of excerpts from the News Letters and bulletins to be given to the press by the A. M. A. Public Relations Department.

4. Preparation of pamphlets for speeches with help of the Bureau of Medical Economics.

It was recommended that state societies and medical care plans be kept informed of the action taken in Michigan, California, Kansas and New Jersey regarding veterans' care and that they be urged to consider taking similar action, and that a copy of Col. J. C. Harding's statement made at the recent state secretaries' conference be attached to the letter for their information.

In accord with the recommendation by the Advisory Committee the Council is to encourage and assist local plans in development of arrangements for care of indigents and others entitled to public assistance, to provide adequate care, of good quality for such persons, with free choice of physician. As this has already been endorsed by the House of Delegates, the Council urged that the care of the indigent be done through medical care plans and put into action wherever possible. Plans now in operation are to put it into effect as soon as possible.

The Council further recommended the creation of a national insurance program to supplement the activities that are at present being carried on by the individual state, county and city plans but not to interfere with any of the present plans. It recommended that it proceed with a national insurance company in the manner suggested by Mr. Don Hawkins whereby the American Health Insurance Corporation would be used as the vehicle to carry out the activities in each state in agreement with the individual states; that the members of the medical profession form a holding company as provided in Mr. Hawkins' suggestions such persons to be selected by the Board of Trustees and the Council on Medical Service and Public Relations. It was stated that the plan can be put into effect in less than ninety days. It further recommended that, in the event the Board of Trustees rejects the proposals made by the Council relative to using the American Health Corporation as a vehicle for establishing a national insurance program, the Trustees should endorse and support a national insurance company sponsored and in cooperation with outside groups by contributions from various medical societies and the American Medical Association.

The Council recommended to the Board of Trustees that a representative from the Board of Trustees and/or the Council on Medical Service and Public Relations be appointed to act in an advisory capacity to any group or groups interested in introducing legislation affecting the health of the American people.

Regional Conferences.—Mr. Hendricks gave a report of the Middle Atlantic and New England regional conferences.

National Health Congress.—A letter from Mr. Harvey Sethman of Colorado, secretary-treasurer of the Conference of State Medical Society Presidents, was read. In the letter Mr. Sethman urged the Board of Trustees to take action with reference to the formation of a national health congress as proposed in the resolution adopted by the House of Delegates. It was generally agreed that the matter should be turned over to a subcommittee and Mr. Hendricks for further contact with the presidents of the various state medical associations to ascertain whether or not they have such a health congress in their various states and whether or not they would be willing to form one. It was felt that such a program should originate on the state level, and that at such time as it is well organized the Council should hold a national meeting in Chicago.

Public Relations for State and Local Medical Societies.—Mr. Hendricks suggested that it might be well to assist state and local societies in the development of public relations by preparing a brochure on public relations and by preparing a complete bibliography covering both the general and specific fields of public relations and publicity.

Health Insurance Kits.—Because of the many requests for material on compulsory health insurance, it was suggested that the Council prepare kits for the various state and local medical officers and for officers of the Woman's Auxiliary.

Expression of Condolence to Mrs. W. S. Leathers.—The Council voted unanimously to express its sorrow and loss at the death of Dr. W. S. Leathers, former member of the Council, and requested Mr. Hendricks to convey the expression to Mrs. Leathers.

PREPAID MEDICAL CARE NEWS

United Medical Service, Inc., Broadens Contract

A more liberal contract has been announced by United Medical Service, Inc., 370 Lexington Avenue, New York City. Under the new provisions small employed groups and individuals not affiliated employers already under U. M. S. may subscribe to the plan.

The new provisions also affect some 300,000 persons heretofore unable to obtain maternity benefits under U. M. S. These individuals, originally enrolled in Blue Cross, subsequently left their places of employment and continued their subscription on a nongroup basis. Under the U. M. S. family contract they may now obtain surgical indemnity in hospitals including maternity benefits.

Provision has also been made for minor surgical operations performed in a doctor's office.

More than 175,000 persons now subscribe to U. M. S., with approximately 10,000 physicians participating.

Woman's Auxiliary

West Virginia

The fall meeting of the executive board of the Woman's Auxiliary to the West Virginia State Medical Association was held at the Daniel Boone Hotel, Charleston. Among those who attended were the following officers and members of the advisory board: Mrs. Ulysses G. McClure, president, Charleston; Mrs. Delmas E. Greeneltch, president-elect, Wheeling; Mrs. Dana T. Moore, recording secretary, Parkersburg; Mrs. Ralph S. McLaughlin, corresponding secretary, Charleston; Mrs. Scott A. Ford, past president, Beckley; Mrs. A. G. Rutherford, first auxiliary president, Huntington, and Drs. Hu C. Myers, Philippi, John P. Helmick, Fairmont, Scott A. Ford, Beckley, and U. G. McClure, Charleston, members of the advisory board. Mrs. John P. Helmick, past president and now president of the Auxiliary to the Southern Medical Association, Fairmont, was also present.

The officers and members of the board were guests at a luncheon at which members of the Woman's Auxiliary to the Kanawha Medical Society were hostesses. Mrs. J. Preston Lilly, president of the Kanawha auxiliary, presided as chairman.

Guest speakers were Dr. Bert Bradford Jr., Charleston, who spoke on the work of the committee on relocation and reestablishment of returning medical veterans, of which he is a member, and Mr. Charles Lively, executive secretary of the state medical association, who discussed pending medical legislation.

The executive board of the Woman's Auxiliary to the State Medical Association has fixed May 13-15, 1946 as the time for the twenty-second annual meeting, which will be held at Huntington conjointly with the state medical association. The program for the annual meeting is in charge of the convention committee, of which Mrs. E. J. Humphrey, Huntington, is chairman.

Medical Legislation

STATE LEGISLATION

Kentucky

Bills Passed.—S. 87 passed the house March 21. It proposes that no person after July 1, 1946 shall maintain a hospital in the state without first obtaining a license therefor. The word "hospital" is defined as "any institution which maintains and operates organized facilities for the diagnosis, treatment and care of humans suffering from illness, injury or deformity, where bedside nursing care is rendered for a period exceeding twenty-four (24) hours, to care for ten (10) patients or more." S. 152 passed the house March 21. To amend the law relating to the practice of pharmacy, it proposes that any one who, while in the service of the armed forces, was regularly employed for a period not less than twelve months in the preparation and dispensing of drugs and medicines and who, in addition thereto, has successfully completed at least two years of study in a recognized college of pharmacy may apply for a pharmacist's license.

Bills Enacted.—H. 171 was approved March 23. It authorizes the establishment, maintenance and operation of medical service plan corporations. "Medical services" means the "general and usual services rendered and care administered by doctors of medicine." "Participating physician" means a "doctor of medicine licensed to practice medicine and surgery in this state under the provisions of the medical practice act" who agrees in writing to perform the services specified by the subscription certificates. S. 109 was approved March 23. To amend the law relating to the practice of chiropractic, it increases the required period of academic training and adds philosophy to the list of subjects which must be studied.

Massachusetts

Bills Introduced.—H. 820 proposes to authorize the department of mental health to construct and maintain an additional hospital for feebleminded children. H. 974 proposes that any veteran who had previous experience or qualifications in any trade or occupation licensed by the commonwealth shall be exempt from provisions of new laws enacted since the beginning of World War II. H. 1134, to amend the law relating to the offense of operating a motor vehicle while under the influence of intoxicating liquor, proposes that no person shall be adjudged guilty of such offense in the absence of testimony from a physician licensed to practice in this commonwealth to the effect that such person was under the influence of intoxicating liquor at the time of the alleged offense.

Bills Passed.—H. 298 passed the house March 25. To amend the law relating to the practice of pharmacy, it proposes to authorize the board and the commissioner of education to establish standards to be met by colleges of pharmacy, to grant certificates of approval to colleges meeting such standards and to revoke any certificate of approval previously issued to any college which lowers its standards below that established by the board and the commissioner. H. 1132 passed the house March 25. To amend the law relating to actions for personal injuries, it proposes that a physician or surgeon who makes a physical or mental examination of an injured person in connection with any claim for damages for personal injuries shall be deemed to be the agent of the party for whose information the examination was made for the purpose of answering interrogatories.

Bill Enacted.—H. 74 has become chapter 155 of the Laws of 1946. To amend the law relating to bacteriologic laboratories, it authorizes the department of public health to grant certificates of approval for laboratory tests on milk, foods, eating utensils, water and sewage in accordance with such rules and regulations as the department may establish.

Mississippi

Bills Passed.—H. 994 passed the senate March 25. It proposes an appropriation to be used and expended by the state board of health and the state department of education in cooperation with the international health division of the Rockefeller Foundation and the general education board, respectively, in carrying out a program of coordinated school, health and nutrition services. S. 221 passed the senate March 20. It proposes to require all teachers in the elementary and high schools of the state, and all other state employees who work directly with children, to submit annually to an examination for tuberculosis, including an x-ray analysis, by a competent physician or by the state health department.

Missouri

Bills Passed.—S. 424 passed the house March 28. It proposes to transfer to the State Board of Medical Examiners certain powers and duties heretofore vested in the State Board of Health. S. 432 passed the house March 26. It proposes the creation of a State Board of Chiropody and the assumption by such board of powers and duties heretofore vested in the State Board of Health. S. 433 passed the house March 26. It proposes to transfer to the State Board of Chiropody certain powers relating to licensure and registration of practitioners heretofore vested in the State Board of Health. S. 434 passed the house March 26. Relating to the licensing of midwives, it proposes to transfer to the division of registration and examination of the state department of education certain powers heretofore vested in the State Board of Health. S. 435 passed the house March 26. Relating to the licensing of chiropractors, it proposes to transfer to the executive secretary of the division of registration and examination of the state department of education certain powers heretofore vested in the State Board of Chiropractic.

Bills Enacted.—H. 280 was approved March 25. It authorizes a county or a group of counties to operate a health center. H. 754 was approved March 15. It authorizes any county to build and maintain a county hospital. H. 831 was approved March 15. To amend the law relating to the appointment of deputy state commissioners of health, it authorizes the county courts of any county to appoint as a deputy state commissioner of health a duly licensed qualified physician. The existing law requires only the appointment of a reputable physician.

New Jersey

Bills Introduced.—A. 47 proposes the establishment in the executive branch of the state government of a state department of health, the chief administrative officer of the department to be the state commissioner of health, who shall be a duly licensed physician, a graduate of a regularly chartered and legally constituted medical school, with at least five years' experience in the actual performance of public health duties, and with skill and experience in public health administration and sanitary science. He would receive an annual compensation of $15,000. S. 197, relating to coroners' and county physicians' reports, proposes that whenever an autopsy or chemical analysis is deemed necessary the county physician, or the coroner, shall cause a report of the findings of such autopsy, chemical analysis or other test to be filed with the county prosecutor's office, and such report shall be available for inspection to all officials, doctors or citizens having an established legitimate interest in the same.

Bills Passed.—S. 120 passed the senate March 19. It proposes the establishment of a diagnostic center to be fully equipped with all modern scientific equipment and provided with a staff of competent specialists in the field of medicine, psychiatry and psychology, to the end that full and complete diagnostic services shall be available to any governmental agency desiring to secure a complete diagnosis of any individual having need for such services. S. 278 passed the senate March 25. To amend the law relating to medical service corporations, it proposes, according to a statement attached to the bill, "to enable veterans with service connected disabilities to choose their own personal physician and to be treated in local hospitals that have been designated by the Veterans Administration."

New York

Bills Passed.—A. Res. 68 passed the assembly and the senate March 21. It proposes the creation of a joint legislative committee to make a survey and study of the socal, educational and physical problems of individuals afflicted with cerebral palsy, with special attention to those whose muscle involvement is commonly referred to as (1) spasticity or (2) athetosis or (3) ataxia and including those who have similar central motor or sensory defects. A. 2083 passed the senate March 25. It proposes to extend the life of the temporary state commission previously appointed to formulate a long-range health program from March 1946 to March 1947. A. 2274 passed the assembly March 21 and the senate March 22. To amend the public health law, it proposes provisions governing the furnishing of care and treatment to persons suffering from tuberculosis as well as diagnostic tests, studies and analyses for the discovery of tuberculosis, without cost or charge to any resident of the state who is suffering from, or is suspected of having, tuberculosis. A. 2582 passed the assembly March 21 and the senate March 25. To amend the education law, it proposes the granting of a license to practice physiotherapy without examination to persons showing a certificate of honorable discharge from the United States Army, Navy or Marine Corps and presenting to the department evidence that at the time of entrance into the military service he was a resident of the state and a graduate in good standing of a legally chartered school or college in the United States teaching physiotherapy, which school required a course of study equivalent to four years of seven months each. A. 2739 passed the senate March 25. It proposes to authorize the state department of taxation and finance to receive from the federal government any moneys which the federal government shall offer to the state to assist to inventory its hospitals, to survey the need for construction of hospitals, to develop a program for construction of public and other nonprofit hospitals and to construct such hospitals in accordance with such program, and generally for all of the purposes for which any such moneys shall be offered pursuant to any federal law. The term "hospitals" includes public health centers and related facilities. S. 1189 passed the assembly March 25. To amend the law relating to live pathogenic micro-organisms or viruses, it proposes that persons cultivating or possessing live pathogenic micro-organisms or viruses must satisfy the commissioner of health that such organisms or viruses will not become a menace to the public health and shall register with the commissioner of health. The registration must be renewed each year. S. 1319 passed the senate March 20 and the assembly March 21. To amend the law relating to hypnotic and somnifacient drugs, it would prohibit prescription therefor from being refilled if the prescription bears a direction to that effect. The proposal would further authorize the prescribers to indicate the number of times a prescription may be refilled. If the prescription is silent as to the refilling, then the prescription may be refilled by the pharmacist during a period of not more than six months from the original date of the prescription. A pharmacist would be prohibited from furnishing a copy of the prescription to the patient. S. 1354 passed the assembly March 25. To amend the law relating to nonprofit medical and hospital service corporations, it proposes to authorize the creation of dental expense indemnity service plans. Dental expense indemnity would consist of reimbursement for dental care provided through duly licensed dentists and for furnishing necessary appliances, drugs, medicines and supplies, prosthetic appliances, orthodontic appliances, precious metal and ceramic restorations. S. 1380 passed the senate March 25. To amend the law relating to divorce, it proposes to authorize reports of physicians to be received in evidence without the personal appearance of the physicians themselves, where insanity is in issue. S. 1563 passed the senate March 20 and the assembly March 25. It proposes the creation of a board of examiners in ophthalmic dispensing. S. 1695 passed the assembly March 20. To amend the education law, it proposes to redefine a podiatrist as one "who holds himself out as being able to diagnose, treat, operate or prescribe for any disease, pain, injury, deficiency, deformity or physical condition of the human feet, and who shall either offer or undertake by any means or method to diagnose, treat, operate or prescribe for any disease, pain, injury, deficiency, deformity or physical condition of the same within the following limitations: operations on the feet shall be limited to minor surgery; and the use of anesthesia shall be limited to local anesthetics." S. 1797 passed the assembly March 21. To amend the workmen's compensation law, it proposes that physician members of the industrial council shall not be eligible for authorization to render medical care under the act and shall not examine, treat, consult or in any other way care for a compensation claimant either at the request of such claimant or of a carrier. S. 2392 passed the senate March 22. It proposes to authorize the state department of taxation and finance to receive from the federal government any moneys which the federal government shall offer to the state to assist to inventory its hospitals, to survey the need for construction of hospitals, to develop a program for construction of public and other nonprofit hospitals and to construct such hospitals in accordance with such program. Hospitals would include public health centers and related facilities.

Rhode Island

Bills Introduced.—H. 960 proposes to extend to March 29, 1946 the life of the special committee studying problems arising out of the Rhode Island Cash Sickness Compensation Act. S. 224 proposes the creation of a state board of examiners in naturopathy. According to the proposal, "Naturopathy . . . is a distinct system of healing based upon its own teachings as to cause of disease, the prevention and cure of human illness and the maintenance of health. It uses no drugs or medicines. It is the science of prevention, diagnosis and treatment of disease by means of any one or more of the psychological, physical and material forces or agencies of nature. Its philosophy embraces the triplicity of sciences: The psychological: such as psychotherapy. The physical or mechanical: such as manual or mechanical manipulation, exercise, hydrotherapy, heat, light, pneumatics and electrical and mechanical devices. The material: (Phytotherapy) such as corrective nutritional and dietetic regimens, concentrated supplemental food substances and fasting as correctives in the treatment of disease and maintenance of health." Licentiates would not be authorized to write prescriptions for drugs or internal medication or practice major surgery.

South Carolina

Bill Passed.—H. 1157 passed the house March 22. It proposes that no person or combination of persons shall practice or attempt to practice as a dental laboratory technician without a certificate or registration either as a registered apprentice or as a registered dental laboratory technician issued pursuant to the provisions of this act by the state board of dental examiners. The practice of a dental laboratory technician is described as "the fabrication of prosthetic dental appliances, such as the using of gold, other metals or combination of metals, plastics, porcelains, artificial teeth or other materials in the manufacture of appliances worn in the oral cavity, replacing teeth and tissue or worn on or around the teeth." S. 101 passed the house March 22. It proposes to require every physician attending a pregnant woman for a condition relating to pregnancy to take or cause to be taken a sample of her blood at the time of the first examination and to submit that sample to an approved laboratory for a standard serologic test for syphilis.

Bill Enacted.—H. 566 has become Governor's Act No. 546 of the Acts of 1946. It amends the definition of the practice of optometry by including therein one who practices orthoptics or who prescribes or fits contact lenses.

Virginia

Bills Enacted.—H. 257 has become chapter 295 of the Laws of 1946. It provides that any person who has tuberculosis in a communicable form who, having been instructed in writing by the local board of health, department of health or health officer or superintendent of any sanatorium of the state to take precautions to protect the members of his household and the public from being infected by tuberculosis communicated by such person, wilfully refuses to follow such instructions shall be guilty of a misdemeanor. S. 21 has become chapter 197 of the Laws of 1946. It authorizes the state board of health to initiate and administer a program of hospital and outpatient treatment and care for indigent and medically indigent persons residing in the state. S. 149 has become chapter 186 of the Laws of 1946. It authorizes the creation of city hospital authorities to investigate hospital, medical and health conditions and to carry out hospital projects so as to provide adequate hospital, medical and nursing facilities. S. 237 has become chapter 280 of the Laws of 1946. It provides for the creation of an examining board for the certification of clinical psychologists.

West Virginia

Bill Enacted—S 3-X was approved March 28 It provides a new law for the organization and regulation of hospital service and medical service corporations Among other features, it creates a hospital and medical service advisory council to assist the insurance commissioner in the supervision of such corporations "Medical service" is defined as "such medical and surgical care, to be provided by duly licensed physicians, or such payment therefor, as may be specified in the contract made by the subscriber with the corporation"

Washington Letter

(From a Special Correspondent)

April 1, 1946

Veterans to Get Three Way Hospitalization Program

Gen Omar N. Bradley, Veterans Administrator, has announced a three way hospitalization program for his agency which he says will give ex-servicemen and women medical care "second to none" The three points are (1) immediate construction of new hospitals to cost $448,000,000, eighty in all, with additions to present hospitals, (2) a drive to staff Veterans Administration hospitals with the best doctors in the country and (3) an arrangement with state medical groups to give veterans with service connected disabilities treatment in their own home towns by their own private doctors and hospitals Dr (formerly Major General) Paul R Hawley, chief of the Veterans Administration new Department of Medicine and Surgery, already has some of the plans in operation on behalf of war veterans Congress has authorized the $448,000,000 for hospitals but has appropriated only $300,000,000 The agency is confident that the remaining $148,000,000 will be forthcoming The agency is at present seeking four hundred physicians to fill vacancies as rating specialists in regional offices Veterans are to be given preference in appointments as consulting specialists for veterans' hospitals

Military Training Legislation Being Shelved

House Military Committee members predict that there will be no universal military training legislation this year It is planned to submit the controversial subject to the new Congress when it convenes next January The fact that this is an election year is a determining fact Furthermore the Army has stated that it does not want selective service and universal training at the same time, and it is now asking for an extension of the wartime draft The Senate Military Affairs Committee has set April 9 as a deadline for a vote on draft extension

Proposal for Cancer Research Center

The National Advisory Cancer Council has asked for construction of a cancer research hospital at Bethesda, Md, adjacent to Washington, as part of the national campaign to combat the disease Eric Johnston, president of the United States Chamber of Commerce, opening cancer control month, asked for a nationwide education campaign The Advisory Cancer Council has urged Surg Gen Thomas Parran to ask Congress for funds to build a cancer hospital adjacent to the National Cancer Institute

Reduction in Fatality Rate of Meningitis

Dr James G Cummings, head of the District of Columbia Health Department Bureau of Preventable Diseases, pointed to the possibility of meningitis becoming a rare disease when he called attention to the drop in the fatality rate from 40 to 10 per cent in the last ten years He gave credit to use of sulfonamide drugs and penicillin and said that continued efforts in early diagnosis and treatment would reduce deaths still further

Many Physicians Still in Army and Navy

Despite discharges, more than two thirds of the total of 845 practicing physicians, hospital residents and interns of Washington who joined the armed services are still in uniform a poll shows And of the total of 262 who have returned, only a small number have been able to find office space either to resume or to begin practice One physician said that many doctors are literally practicing out of their hats"

Coming Medical Meetings

Aero Medical Association Chicago, April 7 9 Dr. David S Brachman, 1016 Dime Building, Detroit 26, Secretary

Alabama, Medical Association of the State of, Birmingham, April 16 18 Dr Douglas L Cannon, 519 Dexter Ave, Montgomery 4, Secretary.

American Association for Thoracic Surgery Detroit May 29 31 Dr. Richard H Meade Jr, Kennedy General Hospital, Memphis 15, Tenn, Secretary

American Association of the History of Medicine Atlantic City, May 26 27 Mr W B McDaniel 2d, 19 S 22d St, Philadelphia 3, Secretary

American Broncho Esophagological Association Chicago, May 31 Dr Paul H Holinger, 700 N Michigan Ave, Chicago 11, Secretary

American College of Physicians Philadelphia, May 13 17 Mr E R Loveland, 4200 Pine St, Philadelphia 4, Executive Secretary

American Gastro-Enterological Association, Atlantic City, May 24 25 Dr J Arnold Bargen, 102 Second Ave, S W, Rochester, Minn, Secretary

American Laryngological Association Chicago, May 29 30 Dr Arthur W Proetz 5720 Washington Blvd, St Louis 8 Secretary

American Laryngological, Rhinological and Otological Society, Chicago, May 27 28 Dr C Stewart Nash, 277 Alexander St, Rochester 7, New York, Secretary

American Otological Society Chicago, May 31 June 1 Dr. Gordon D Hoople, 713 E Genesee St, Syracuse, N Y, Secretary.

American Pediatric Society, Skytop, Pa, May 1 3 Dr Hugh McCulloch, 325 N Euclid Ave, St Louis 8, Secretary

American Psychiatric Association Chicago May 27 30 Dr Winfred Overholser, St Elizabeth s Hospital, Washington 20, D C Secretary

American Society for Research in Psychosomatic Problems New York, May 11 12 Dr Edwin G Zabriskie, 714 Madison Ave, New York 21, Secretary

Arizona State Medical Association, Phoenix, May 2 3 Dr Frank J. Milloy, 112 N Central Ave, Phoenix, Secretary

Arkansas Medical Society, Little Rock, April 14 15 Dr W. R. Brooksher, 602 Garrison Ave, Fort Smith, Secretary

Association of American Physicians, Atlantic City, May 28 29 Dr. Joseph T Wearn 2065 Adelbert Road, Cleveland 6, Secretary

California Medical Association Los Angeles May 7 10 Dr George H Kress, 450 Sutter St, San Francisco 8, Secretary

Central States Dermatological Society Detroit, April 27. Dr. Clarence E Reyner, Henry Ford Hospital, Detroit, Secretary

Connecticut State Medical Society, Hartford May 1 3. Dr. Creighton Barker, 258 Church St, New Haven 10, Secretary

Florida Medical Association, Jacksonville, April 22 24 Dr. Robert B McIver, P O Box 1018, Jacksonville, Secretary

Georgia, Medical Association of, Macon, May 7 10 Dr. Edgar D. Shanks, 478 Peachtree St, N E, Atlanta, Secretary.

Illinois State Medical Society, Chicago, May 14 16 Dr. Harold M Camp 224 S Main St, Monmouth, Secretary

Iowa State Medical Society, Des Moines, April 17 19 Dr John C. Parsons, 406 Sixth Ave, Des Moines 9, Secretary

Kansas Medical Society, Wichita, April 22 25 Dr F. R Croson, 112 W Sixth St, Topeka, Secretary

Louisiana State Medical Society, Alexandria, May 6 8 Dr P. T. Talbot, 1430 Tulane Ave, New Orleans 13, Secretary

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 23 24. Dr W. Houston Toulson, 1211 Cathedral St, Baltimore 29, Secretary.

Massachusetts Medical Society, Boston, May 21 23 Dr Michael A Tighe, 8 Fenway, Boston, Secretary

Minnesota State Medical Association, St Paul, May 20 22 Dr B B. Souster, Lowry Medical Arts Bldg, St Paul 2 Secretary

Mississippi State Medical Association, Jackson, May 14 15 Dr T. M Dye Box 295, Clarksdale, Secretary

Nebraska State Medical Association, Lincoln, May 6 9 Dr R B Adams, 416 Federal Securities Bldg, Lincoln 8, Secretary.

New Hampshire Medical Society Manchester, May 14 Dr C R Metcalf 5 S State St, Concord, Secretary

New Jersey, Medical Society of, Atlantic City, May 21 23 Dr Alfred Stahl, 55 Lincoln Park, Newark Secretary

New York, Medical Society of the State of, New York, April 29 May 3 Dr Walter P Anderton 292 Madison Ave, New York 17, Secretary

North Carolina Medical Society of the State of Pinehurst, May 1 3 Dr Roscoe D McMillan, P O Box 232, Red Springs Secretary

North Dakota State Medical Association Bismarck, May 26-28 Dr L W Larson 221 Fifth St, Bismarck, Secretary

Northern Tri State Medical Association South Bend Ind, April 9 Dr John L Stitel, 232 Michigan St, Toledo 2, Secretary

Ohio State Medical Association, Columbus, May 7 9 Mr Charles S Nelson, 79 E State St, Columbus Executive Secretary

Postgraduate Institute of the Philadelphia County Medical Society, Philadelphia April 9 12 Dr George P Muller, 301 S 21st St, Philadelphia, Director

Rhode Island Medical Society, Providence, May 15 16 Dr William P Buffum 122 Waterman St, Providence 6 Secretary

Society of American Bacteriologists Detroit May 21 24 Dr Leland W. Parr, 1335 H St N W Washington 5, D C, Secretary

South Carolina Medical Association Myrtle Beach April 30 May 2 Dr Julian P Price 105 W Cheves St, Florence, Secretary

Southwest Allergy Forum Houston, Texas, April 8 9 Dr Albert H Braden 1704 Crawford St, Houston Secretary

Tennessee State Medical Association Knoxville, April 9 11. Dr W. M Hardy, 706 Church Street, Nashville, Secretary

Texas State Medical Association of, Galveston May 6 9 Dr Holman Taylor, 1404 W El Paso St, Fort Worth 3, Secretary.

West Virginia Medical Association Huntington, May 13 15 Mr Charles Lively, P O Box 1031, Charleston 24, Executive Secretary

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

CALIFORNIA

Popular Medical Lectures.—The sixty-fourth course of popular medical lectures sponsored by Stanford University School of Medicine, San Francisco, consisted of the following:

March 1, Poliomyelitis, Dr. Harold K. Faber, How It Starts, Dr. William H. Northway, Its Early Treatment and Dr. Donald E. King, Its Late Treatment, all of San Francisco.

March 15, Dr. Emile F. Holman, San Francisco, Surgery of the Heart.

March 29, Dr. Russell Van Arsdale Lee, Palo Alto, The Conquest of Communicable Disease.

April 12, Dr. Robert S. Stone, San Francisco, Atomic Energy and Medicine.

Lectures for Prospective Members.—The Los Angeles County Medical Association has recently introduced a series of six lectures for applicants to membership in the association. Two lectures are to be given each month and must be attended by the applicant before his application will be considered by the council. The subjects of the lectures are medical organization, health insurance, medical public relations, medical ethics, medical education and medical economics, and medical malpractice. The first lecture, January 25, was attended by more than 200 applicants, while the five lectures held up to March 21 had been presented to audiences of 200 and more applicants. Because of previous commitments, illness or for other reasons considered adequate, applicants who have been unable to attend any one or all of the lectures given on the third and fourth Fridays of each month will be given the opportunity of making up lectures especially presented for them on Sunday afternoons. The dates for the Sunday lectures have not been set but are to be determined when the need for them arises. All applicants who have failed to attend any of the regular series are requested to notify the secretary's office and will in turn be informed as to the time of the make-up lecture. When a group of applicants has attended the six lectures, they will be interviewed in smaller groups by members of the subcommittees, following which the committee on admissions will report to the council on these applicants for membership. According to the *Bulletin* of the association this indoctrination program was presented to the council of the California Medical Association and approved with the recommendation that similar programs be instituted by other county medical associations in the state.

FLORIDA

Personal.—Dr. Erwin F. Hoffman, Jacksonville, recently resigned as epidemiologist with the state board of health and has accepted the position of director of the Central Florida Health District, with headquarters at Ocala. Dr. Hoffman will also direct the Northern Florida and Southwestern Florida Health Districts until officers have been secured for these.——Dr. George E. Lacy, Chattanooga, Tenn., has been appointed director of venereal disease control for Miami and Dade County, effective February 8.

GEORGIA

Physician Honored.—Dr. Simeon E. Sanchez, Barwick, has been selected to receive the 1945 Kiwanis award for outstanding and unselfish service to the community. Dr. Sanchez is the "man of the year" in Brooks County. The award is a plaque of bronze. Dr. Sanchez graduated at Atlanta College of Physicians and Surgeons in 1901.

Appointments at Emory.—Dr. Daniel C. Elkin has returned to his position as the Joseph B. Whitehead professor of surgery at Emory University School of Medicine, Atlanta. Dr. Elkin has been in military service. New appointments to the faculty include Drs. Frank L. Engel, New Haven, Conn., associate professor of medicine; Max Michael Jr., Athens, assistant professor of medicine; Harry L. Allen Jr., Fort Myers, Fla., assistant professor of anatomy; Albert L. Evans, Sandersville, William P. Leonard Jr., Atlanta, and Virgin D. Shepard, Rochester, Minn., all assistant professors in the department of surgery; James T. King, Quitman, and Buford L. O'Neal, Shreveport, La., assistant professors in clinical otorhinolaryngology.

ILLINOIS

Examination to Fill Position of Health Officer.—The state department of public health announces a competitive examination to fill the position of health officer of the East Side Health District, East St. Louis, to be held in Chicago on April 13. Admission to the examination will be limited to persons possessing minimum qualifications of education and experience. Further information may be obtained by writing to Dr. Roland R. Cross, director of the Illinois Department of Public Health, Springfield.

Chicago

Cardinal Stritch Aids Loyola.—Samuel Cardinal Stritch, Archbishop of Chicago, has promised to provide $50,000 a year to aid Loyola University School of Medicine if the Alumni Association will raise an annual sustaining fund of a similar amount. The Archbishop's support is to continue until the endowment fund has reached its goal and is able to maintain the school.

Dr. Slight to Direct Rehabilitation.—Dr. David Slight, Chicago, has been appointed acting superintendent of a new state division of veterans' rehabilitation centers, it was announced February 28. Dr. Slight, who will resign June 30 as professor and head of the department of psychiatry, University of Chicago School of Medicine, where he is now on sabbatical leave, will direct a statewide system of rehabilitation centers planned under the new division, which will be a part of the public welfare department.

Gift to Gifford Memorial Fund.—The department of ophthalmology, Northwestern University Medical School, has received an additional gift of $4,000 to the Sanford R. Gifford Memorial Fund from Mr. Bernard Spero, president of the House of Vision. Mr. Spero had made an earlier donation of $1,000. It is proposed to use this sum to establish a fellowship in research and teaching of refraction and allied subjects to young ophthalmologists. The memorial fund was established in 1944 by friends and associates of Dr. Sanford R. Gifford shortly after his death.

Student Receives Borden Award.—Dr. Richard S. Farr, Highland Park, Mich., has been granted the $500 Borden Undergraduate Research Award at the University of Chicago School of Medicine. Dr. Farr graduated at the medical school March 22 and was granted the award for his paper on experiments on the fate of the transfused leukocyte. A lieutenant (jg) in the U. S. Navy Medical Corps, Dr. Farr will take a naval internship. The award is one of a group that were established in various medical schools (THE JOURNAL, Dec. 22, 1945, p. 1218).

KANSAS

Changes in Health Personnel.—Dr. Thomas R. Hood, Lawrence, has been assigned as full time health officer of Cowley County, with headquarters in Winfield. Dr. H. Dale Palmer is acting director of the Sedgwick County unit during the absence of Dr. John W. Turner, Marion, who is taking graduate work in public health at the University of Michigan Medical School, Ann Arbor.——Dr. Charles M. Fitzpatrick, Salina, has been named Saline County health officer, succeeding Dr. George Seitz.

MASSACHUSETTS

Dwight O'Hara Named Dean of Tufts.—Dr. Dwight O'Hara, Waltham, president-elect of the Massachusetts Medical Society and professor of preventive medicine, Tufts College Medical School, Boston, has been made dean of the medical school. He has been acting dean for the past four years while Dr. Albert W. Stearns was on leave to the Navy Medical Corps. Dr. Stearns recently became head of the new department of applied sociology in the Tufts School of Liberal Arts, according to the New York *Times*. Dr. O'Hara graduated at Harvard Medical School, Boston, in 1919.

Licensing of Osteopathic Physicians.—The Massachusetts Approving Authority recently approved the Kirksville College of Osteopathy and Surgery, Kirksville, Mo., and the Philadelphia College of Osteopathy and Surgery, Philadelphia. Both schools are approved by the American Osteopathic Association. The approval of the Massachusetts Approving Authority followed hearings at which representatives of both schools presented all the facts concerning the qualifications demanded by the approving authority for medical schools. The approving authority had previously denied approval to the Des Moines Still College of Osteopathy, Des Moines, Iowa, which is a school approved by the American Osteopathic Association, an action indicating that the approving authority has not been giving blanket approval to all schools approved by the American Osteopathic Association. As a result of these changes in the law controlling the practice of medicine in the commonwealth and the action of the approving authority, all applicants for examination for registration who matriculated on or after Jan. 1, 1941 must be graduates of medical schools or osteopathic schools that have been judged worthy of approval. According to the *New England Journal of Medicine*, from 1909 until the middle of 1944 graduates of any medical school, osteopathic or regular, were eligible to take the examination of the Massachusetts Board of Registration in Medicine, irrespective of the quality of the school from which they had graduated. But in 1936 the so-called "Approving Authority Law" was passed, which stated that students who matriculated at a medical school on or after Jan. 1, 1939 must have graduated from a school approved by the approving authority. The effective date was subsequently changed to Jan. 1, 1941. This act also specified that, for the purposes of the approving authority, schools approved by the American Osteopathic Association and schools approved by the American Medical Association would receive the same consideration. At the last session of the legislature, apparently, the *New England Journal of Medicine* stated, because they feared that the approving authority never would approve osteopathic schools, the osteopaths introduced legislation to set up an osteopathic board of registration, but the bill was withdrawn. Finally, at the suggestion of the Committee on Education of the legislature, a compromise bill was drawn and finally passed. The bill states that the approving authority shall be increased from three to five members, one member being the osteopathic member of the board of registration in medicine, who shall be a graduate of a school approved by the American Osteopathic Association and by the approving authority, and the other a layman.

MICHIGAN

New Director of Health Service.—Dr. John K. Altland, Hastings, director of the Barry County Health Department for more than five years, has resigned, effective April 1, to become director of the bureau of local health service of the Michigan Department of Health. Dr. Altland fills the position that was vacant when Dr. Eldred V. Thiehoff, Lansing, resigned to become health commissioner of Peoria, Ill. (THE JOURNAL, March 16, p. 725).

Personal.—Dr. Edwin D. MacKinnon, Saginaw, and Dr. Louis J. Gariepy, Detroit, were on February 27 appointed members of the Michigan State Board of Registration in Medicine, succeeding Drs. Eugene S. Thornton, Muskegon, and Harold L. Morris, Detroit.——Dr. George D. Woodward has resigned, effective March 15, as superintendent of the Sault Ste. Marie State Hospital, Sault Ste. Marie. Dr. Thomas W. Thompson, Traverse City, assistant superintendent of the Traverse City State Hospital, will be acting superintendent at Sault Ste. Marie.

Physician Honored.—Dr. Mary Margaret Frazer, Detroit, was chosen "The Woman of the Year of 1945" by the Soroptimist Club, a group of professional business women in Detroit. Dr. Frazer was selected for her work in organizing and serving as medical director of a cancer detection clinic in the city. Each year the club honors the "woman who has made the greatest and most important contribution to the economic advancement of women in Metropolitan Detroit." The cancer clinic, organized by Dr. Frazer, is for women only and is sponsored by the Detroit Federation of Women's Clubs.

Quarantine Regulations Amended.—Quarantine regulations were removed from five communicable diseases by unanimous vote of the Michigan State Council of Health on March 13. If the patient is isolated no quarantine will be enforced on members of the household for scarlet fever, meningococcic meningitis, poliomyelitis, measles and chickenpox. This change in Michigan's regulations for the control of communicable diseases goes into immediate effect. Quarantine will be required only for smallpox and diphtheria. The council also included streptococcic infections of the nose or throat under the regulations governing scarlet fever.

MISSOURI

Lecture Honors George Dock.—The St. Louis Society of Internal Medicine offered a special program March 19 to honor Dr. George Dock, Altadena, Calif., who during his career has been professor and head of the department of internal medicine at the Universities of Michigan, Tulane and Washington and professor of pathology at the University of Texas. The event featured a lecture by Dr. Thomas Francis Jr., professor and chairman of the department of epidemiology, University of Michigan School of Public Health, Ann Arbor, on "Influenza: Its Distribution and Control." The weekly *Bulletin* of the St. Louis Medical Society states that Dr. Dock, while at Washington University, not only left his mark as a teacher but aided in no small degree the development of the medical library of the university and the St. Louis Medical Society.

NEW JERSEY

Dinner for Harrison Martland—Annual Lecture.—On April 10 Dr. Harrison S. Martland, since 1925 medical examiner of Essex County, will be honored at a dinner given by the Essex County Pathological and Anatomical Society. The event will precede the Harrison S. Martland Lecture to be given by Selman A. Waksman, Ph.D., New Jersey Agricultural Experiment Station, Rutgers University, New Brunswick, on "Antibiotics, with Special Reference to Streptomycin." The lecture was established in 1935 by the Essex County Pathological and Anatomical Society, of which Dr. Martland is a past president. He is also professor of forensic medicine at the New York University College of Medicine, New York, director of the Graduate Fortnight of the New York Academy of Medicine and an associate editor of the *American Journal of Surgery*.

NEW YORK

Executive Director Chosen for Hospital Council.—Dr. Albert D. Kaiser, health officer of Rochester, has been named executive director of the newly created Council of Rochester Regional Hospitals which was established in a five year agreement with the Commonwealth Fund (THE JOURNAL, March 23, p. 804). Dr. Kaiser will continue his position as health officer but will immediately take over the direction of the experimental regional hospital and medical project. Dr. Paul A. Lembcke, Rochester, formerly state district health officer in Rochester, will serve as medical associate, effective April 1. Charles M. Royle has been named business manager but will continue in his position as executive manager of the Rochester Hospital Council.

Expanded Program in Optics.—Gifts totaling $150,000 from the Eastman Kodak Company and the Bausch and Lomb Optical Company will support new developments in teaching and research at the Institute of Optics, University of Rochester, it was announced March 15. A part of the program includes the appointment of Brian O'Brien, Ph.D., to the newly created post of research professor of physics and optics, the first research professorship at the university. The enlarged program of the Institute of Optics is in addition to the plans for expanding the department of physics, announced March 14, for which $550,000 has been appropriated by the university for additions to building and equipment for the department. The two programs in physics and optics will be coordinated under the administrative direction of Lee A. DuBridge, Ph.D., professor and chairman of the physics department. Dr. O'Brien, who has been director of the institute since 1938, will devote most of his time to important research projects. He joined the university staff in 1930 as professor of physiologic optics. The new funds for the Institute of Optics were given by the Eastman Kodak Company under a 1945 contribution of $100,000 and by the Bausch and Lomb Optical Company, which is providing $50,000. Both companies assisted in founding the institute in 1929 with financial support and technical assistance. In 1934 the university assumed entire financial responsibility, but Eastman Kodak and Bausch and Lomb continued their interest by having representatives on the board of advisers. The institute is said to be the only one of its kind in this country and one of the few in the world offering work in optics which approaches in scope and completeness that given at the university.

New York City

University News.—The Association of the Alumni, Columbia University College of Physicians and Surgeons, elected Dr. Bernard S. Oppenheimer president during its annual meeting in New York, March 2. Dr. Charles C. Lieb was named secretary. Major Gen. William J. Donovan and Dr. Willard C. Rappleye, dean of the medical school, spoke at the dinner, at which Dr. John J. H. Keating, outgoing president of the association, was toastmaster.

Personal.—Dr. Emery A. Rovenstine, professor of anesthesia at New York University College of Medicine, will, through the devotion of former Bellevue Hospital residents who have served under him, have his name permanently inscribed on a seat in Alumni Hall, the auditorium of the university's proposed new medical center. A committee of former residents, headed by Dr. Solomon G. Hershey, collected $1,100 for the Alumni Hall Fund in honor of Dr. Rovenstine.——Dr. Robert R. Cadmus, recently released from service in the army, has been named director of the Vanderbilt Clinic.

Residencies and Fellowships in Physical Medicine.—Columbia University College of Physicians and Surgeons announced that the first group of residents to be appointed in its program of teaching and research in physical medicine will not be assembled for the introductory course until about May or June. The announcement describing the program appeared in THE JOURNAL March 2, page 591, and indicated that first appointments would be made by March 1. The recent announcement from the university indicates that there are still vacancies in the residencies in physical medicine at some of the hospitals cooperating in the program and that the introductory course will be given as soon as men with proper qualifications are assembled. Applications are also being considered for the following year.

Grants to Long Island College.—Gifts and grants totaling $143,437 were made to the Long Island College of Medicine, Brooklyn, during the year ended January 1, exceeding by $16,063 contributions received during the previous year. These contributions, not including increments in the endowment of the college, fall into six categories: general, $84,066; memorials and scholarships, $2,503; teaching, $21,904; research, $23,173; fellowships, $2,000, and prizes, $75. The development fund, from which a total of $63,662 was utilized during the calendar year 1945, represents the largest amount received. The Commonwealth Fund gave the second largest amount. It contributed $20,304 to the department of psychiatry. To establish this department the Commonwealth Fund made a six year grant, which started in 1943 with a contribution of $5,112. This department, named after the late Dr. William Alanson White, graduate of the college in the class of 1891, is now located in a new building at 88 Amity Street.

OHIO

Special Program for Child Health Day.—The Academy of Medicine of Cleveland, Western Reserve University School of Medicine, Cleveland, and the division of health of Cleveland are cooperating in a refresher course in obstetrics and pediatrics at the Cleveland Academy of Medicine, April 29-May 1, in observance of National Child Health Day. Additional information can be obtained from Dr. Arthur W. Thomas, Room 27, City Hall, Cleveland 14.

Penicillin and Tooth Decay.—About 1,000 boys in a large industrial school in the East will be the subjects of an experiment by Thomas J. Hill, D.D.S., professor of clinical oral pathology, Western Reserve University School of Medicine, Cleveland, to test the use of penicillin as a means of eradicating tooth decay. Dr. Hill will conduct the work for a year or more, starting about July 1. The selected group have been the subjects in short surveys at Western Reserve. This experiment included the mixture of penicillin wtih tooth powder.

Postgraduate Assembly.—The eighteenth postgraduate assembly of the Mahoning County Medical Society will be conducted at the Pick-Ohio Hotel in Youngstown, April 17, by the following members of the staff of Johns Hopkins University School of Medicine, Baltimore:

Dr. William F. Reinhoff Jr., *associate professor of surgery.*
Dr. Charles W. Wainwright, associate in medicine.
Dr. Leroy M. Polvogt, associate *professor* of laryngology and otology.
Dr. Raymond E. Lenhart, associate in *orthopedic surgery.*
Dr. Houston S. Everett, associate *professor* of gynecology.

TENNESSEE

State Medical Meeting.—The Tennessee State Medical Association will hold its 1946 session at the Hotel Andrew Johnson, Knoxville, April 9-11, under the presidency of Dr. William C. Chaney, Memphis. Among the out of state speakers will be:

Dr. Robert A. Arens, Chicago, Radiologic Survey of the Urinary Tract—Excretion *Urography.*
Dr. Hughes Kennedy, Jr., Birmingham, Ala., Obstetric and Pediatric Meddling.
Dr. W. W. Bauer, Chicago, Health Education Today and Tomorrow.
Mr. James Stegen, Chicago, Showdown on Political Medicine.
Mr. George Bugbee, Chicago, Benefits of the Hill-Burton Bill, S. 191.
Dr. Roger I. Lee, Boston, President, American Medical Association, The American Medical Association—What, Who and Why.

The woman's auxiliary to the association and the Texas State Pediatric Society will also meet.

VIRGINIA

Changes in Health Personnel.—Dr. William Grossmann, Richmond, director of the bureau of communicable diseases of the Virginia State Department of Health, has resigned, effective April 1, to take a postgraduate course in medicine at the University of Virginia Department of Medicine, Charlottesville. Dr. Harry H. Henderson, Richmond, assistant epidemiologist, has resigned, effective April 1, to take a postgraduate course in medicine at the Medical College of Virginia, Richmond. Dr. Edward M. Holmes Jr., Richmond, resumed his position as director of the division of venereal diseases, effective March 15. He recently was released from the army.

John Huff Named to New Position.—Dr. John M. Huff, U. S. Navy, retired, on March 7 was appointed superintendent of public health of Norfolk in a newly created separate department of public health which was set up, effective March 15. The city's bureau of public health was a part of the department of public welfare but became the department of public health March 15 as the result of an ordinance adopted by the city council. Dr. Albert L. Chapman, U. S. Public Health Service, has been acting commissioner of health of Norfolk, following the resignation of Dr. John C. Sleet, who retired December 31.

Stuart McGuire Lectures and Graduate Clinic.—The Stuart McGuire Lecture series and the Spring Postgraduate Clinic of the Medical College of Virginia, Richmond, were presented in cooperation with the department of clinical education, Medical Society of Virginia, March 7-8. Dr. Elmer L. Sevringhaus, Nutley, N. J., gave both lectures, on the clinical endocrinology of the female and male sex hormones. A symposium on chemotherapy and antibiotics was the theme of the graduate program with the following speakers:

Dr. Harrison F. Flippin, Philadelphia, Cardinal Principles of Sulfonamide and Antibiotic Therapy.
Dr. Harvey B. Haag, Richmond, Va., Absorption of Sulfonamides from Local Application.
Dr. Isaac A. Bigger, Richmond, Clinical Experience with Local Use of Sulfonamides.

State Society Appoints Public Relations Director.—Mr. Henry S. Johnson, Hylas, has been appointed director of public relations of the Medical Society of Virginia, effective March 15, with offices at the headquarters of the society, Richmond. Mr. Johnson will contact the physicians of the state, giving them information as to medical, surgical and hospital service plans and aiding in the development and establishment of such plans. In addition he will inform the public as to the benefits of such plans and services. A broad constructive program for medical care has been instituted. Mr. Johnson will be available not only to the local medical societies throughout the state but to local civic groups and organizations for discussion of plans to inaugurate services and to assist in the development of such plans as will provide expansion of medical services. Mr. Johnson once served as supervisor of vocational rehabilitation of the Virginia State Department of Education and during 1944-1945 was state representative of the National Foundation for Infantile Paralysis.

WASHINGTON

Smallpox Outbreak—Five Deaths.—On March 29 five deaths had occurred in an outbreak of smallpox in Seattle. Newspapers reported that the infection came from Japan. The army placed a strict smallpox quarantine on the 2,508 soldiers and crew members of the army transport *Marine Devil* March 31 when it arrived in San Francisco from Korea with 2 cases of the infectious disease aboard. Port of embarkation officials said that all precautions were being taken "for the protection of the public" to prevent possible further spread of the oriental black smallpox epidemic which has theatened the entire Pacific Coast. The disease was believed brought to this country by servicemen returning from the Pacific. The *Marine Devil* was detained at a special anchorage in San Francisco Bay, where passengers, mostly soldiers returning for discharge, will be held under quarantine until April 7. The navy transport *LaSalle*, carrying 1,400 service men, is quarantined at San Francisco after bringing a smallpox case from the Pacific, it was said. On April 1 the fire stations in Seattle were to be manned with doctors and attendants in an effort to vaccinate 50,000 persons daily; 15,000 persons were being vaccinated each day at the time of this report. Canada has barred all persons traveling from Seattle to Victoria, B. C., by boat who are unable to show a vaccination certificate. In San Francisco at least half the population has been vaccinated, it was stated.

WEST VIRGINIA

State Society Activities.—Dr. Alonzo R. Sidell, Williamstown, has been appointed a member of the council of the West Virginia State Medical Association to succeed Dr. Curtis P. Artz, Grantsville, who resigned when he accepted a three year residency in surgery at Ohio State University Hospital, Columbus. The following doctors have been elected by the council of the association as honorary life members: Benjamin M. Stout, Morgantown; William M. Riley, Lillybrook; Robert Wriston, Beckley; Ralph C. Mitchell, Sabine, and Lonzo E. Steele, Logan. At a meeting held at Parkersburg late in February the council unanimously adopted a resolution calling on the Public Health Council to waive the requirement of an academic degree by applicants for licensure by reciprocity who served *in the armed forces during* World War II The regulations now require that such applicants must have completed two years of academic work of collegiate grade in a standard college of arts and sciences of equal rank with the college of arts and sciences at West Virginia University

GENERAL

New Head of Oxford Press Medical Department.—Russell I Garton has been named to succeed Frederick F. Randolph as head of the medical department of Oxford University Press, New York and London, effective April 1

Pan American Congress of Pediatrics—The first Pan American Congress of Pediatrics is now being planned for New York City late in 1948 Dr Jay I Durand, Seattle, is chairman of the organization committee and Dr Felix A Hurtado Galtes, Havana, Cuba, associate chairman

Examinations for Fellowship for College of Chest Physicians—The next oral and written examinations for fellowship in the American College of Chest Physicians will be held at San Francisco on June 29 Applicants should communicate with the Executive Secretary, American College of Chest Physicians, 500 North Dearborn Street, Chicago 10

Personal—Dr Ashley W Oughterson of the Army Institute of Pathology, Washington, has been named executive vice president of the American Cancer Society Colonel Oughterson, recently medical aide to General Douglas MacArthur and formerly clinical professor of surgery at Yale University School of Medicine, New Haven, Conn, will serve as medical and scientific director in his new post

Credentials Lost.—Dr Horace P Stimson, Chicago, announced the loss of his diploma from Harvard Medical School, *Boston*, dated *June 22, 1922*, also his diploma from Amherst *College dated June 5, 1918*, his medical license of 1924 from the state of Maine and his license of 1926 from the state of Florida Dr Stimson reports that the loss occurred in the course of moving and storage in the past four years while he was on active duty in the medical corps of the U S Naval Reserve

New Officers of National Health Council—Mr Philip R Mather, Boston, was elected president of the National Health Council at its meeting March 22 at the Hotel Commodore, New York Ira V Hiscock, Sc D New Haven, was named vice president and Dr Reginald M Atwater, New York, secretary Louis I Dublin, Ph D New York, has been elected chairman of the citizens planning committee of the National Health Council Mr Albert Lasker vice chairman and Dr. Howard A Rusk, New York, secretary

International College of Surgeons—The International College of Surgeons, United States Chapter, will hold its eleventh assembly and convocation in Detroit October 21-23 Surgical clinics in Detroit hospitals will feature the first morning of the assembly Thereafter all the meetings the convocation and the exhibition will be held in the Masonic Temple The Detroit Statler and the Book-Cadillac will be hotel headquarters Additional information may be obtained from Dr. Louis J Gariepy, executive secretary, 16401 Grand River Avenue, Detroit

Surgeons Plan Clinical Congress—The American College of Surgeons will hold its thirty-second clinical congress at the Waldorf-Astoria, New York, September 9 13, the first congress since the meeting in *Boston* in 1941 Since the last session 2,744 surgeons have been received into fellowship in absentia Officers, regents and governors have remained in office since 1941 because of the cancellation of annual meetings of the fellows Special interest will also therefore be attached to the installation of the officers elect, headed by Dr Irvin Abell, Louisville, Ky, chairman of the board of regents as president. Dr William Edward Gallie Toronto, who has been president since November 1941 will give the address at the presidential meeting and convocation on the evening of September 9 in the Grand Ballroom of the Waldorf-Astoria The address of the American College of Surgeons is 40 East Erie Street, Chicago 11

Francis Dieuaide Named Scientific Director of the Insurance Research Fund—Dr Francis R Dieuaide recently chief of the tropical disease treatment branch of the Surgeon General's Office of the army, has been named scientific director of the Life Insurance Medical Research Fund, it was announced March 28 Dr Dieuaide who received the Legion of Merit for his supervision of the treatment of malaria and other tropical diseases in the army, is now on terminal leave with the rank of colonel He assumed his duties with the Life Insurance Fund on April 1 Before going into the medical corps in 1943 Dr Dieuaide was clinical professor of medicine at Harvard Medical School, Boston a post which he is resigning The Life Insurance Medical Research Fund was established last year to make grants to universities and medical schools for research on diseases of the heart and related diseases The fund plans to make grants of more than $3,000,000 for this purpose over the next five years A total of 147 life insurance companies in this country and Canada are supporting the fund (The Journal, January 12, p 100) Coincident with the announcement of Dr Dieuaide's appointment Mr Albert Linton, chairman of the fund, announced that directors of the fund had approved a new series of grants totaling $310 000 in support of research work on diseases of the heart and related diseases at twenty-seven institutions in this country and in Canada. This action brings the total of grants made since the fund was organized to $436 000 Other applications are still under consideration As scientific director, Dr Dieuaide will investigate the applications for funds and make recommendations to the group's advisory council The new grants made by the fund represent a total of thirty-four specific allocations to institutions and research workers Five of the grants are for studies on arteriosclerosis and coronary disease, four for studies on hypertension, three for studies on kidney diseases and five for research on rheumatic fever Nine of the studies are concerned with fundamental physiologic problems, and eight are for basic chemical and pharmacologic studies of the circulation Dr Dieuaide graduated at Johns Hopkins University School of Medicine, Baltimore, in 1920 He specialized in internal medicine and heart disease at Johns Hopkins and abroad and was an associate in medicine at Johns Hopkins until 1924 For the ensuing fifteen years Dr Dieuaide was with the Peiping Union Medical College, an institution founded and supported by the Rockefeller Foundation at Peiping, China, as professor and head of the department of medicine He joined the faculty of Harvard Medical School, Boston, on his return to this country in 1939

LATIN AMERICA

Health Activities in Latin America—*Congress of Neurosurgery*—The second South American Congress of Neurosurgery will be held in Santiago, Chile, in April 1947 The program will be divided into three discussions, hydrocephalus, histology in brain tumors in relation to clinical findings, and brain abscess Dr Alfonso Asenjo is secretary

Laboratory Physicians Form Society—The Cuban Society of Clinical Laboratory Physicians was formed recently with the following officers among others Dr Antonio Selleck Azzi, president, Dr Emilio Garcia Perez, vice president, Dr Luis Torra Cabarroca, secretary, Dr Emilio Umanue Perez, treasurer

Personal—Dr Ernest B Howard Boston, former director of the division of venereal disease control of the Massachusetts Department of Public Health, has taken up duties as chief of the Institute of Inter-American Affairs health and sanitation field party in Peru——Dr Robert M Mein Wichita Falls, Texas, recently relieved from active duty by the War Department was to leave the United States in late January or early February for Brazil Dr Mein will serve as medical officer in Belem Brazil, succeeding Major Hyman Zukerman, who recently returned to the United States for discharge from the army Dr Mein's family will accompany him——Dr Paul H. Harmon Huntington, W Va, addressed the Colegio Medico de El Salvador, March 20 21 Dr Thomas D Masters, Springfield Ill, also spoke, on "Water Balance"

Rabies Epidemic in Ecuador—The Ecuadorean government has launched an extensive campaign against rabies, a press report indicates Dr Gonzalo Cardenas is in charge of the work It is reported that more than 16 000 dogs in Quito alone have been killed while throughout the republic at least 40 000 dogs have been killed The press report stated that while dogs and sheep are dying in large numbers only 400 human beings were known to have died of rabies at the time the physician was interviewed

CORRECTION

New Absorbable Surgical Dressing—The third reference accompanying the current comment with this title in The Journal February 16 page 414, was incorrectly given and should have been Frantz, Virginia Kneeland and Lattes, Raffaele Oxidized Cellulose—Absorbable Gauze, J A M A **129:798** (Nov 17) 1945

Deaths

Fred M. Smith ⊕ noted internist of Iowa City, died February 23, aged 57, of coronary occlusion.

Dr. Smith was born in Yale, Ill., May 29, 1888. He received his B.S. at the University of Chicago in 1913, graduated at Rush Medical College in 1914 and served his internship at the Presbyterian Hospital, Chicago. Dr. Smith was a member of the staff at Rush Medical College from 1916 to 1924, serving as assistant, associate and instructor in medicine and assistant professor of clinical medicine. He went to the State University of Iowa College of Medicine, Iowa City, in 1924 as professor of the theory and practice of medicine and head of the department, a position he held at the time of his death.

Dr. Smith served as first lieutenant in the medical corps of the army in 1918. He had been a member of various national and local groups, including the American College of Physicians, American Society for Clinical Investigation, American Physiological Society, Society for Experimental Biology and Medicine, Chicago Institute of Medicine and the Chicago Society of Internal Medicine, and a specialist certified by the American Board of Internal Medicine. He was secretary of the Section on the Practice of Medicine of the American Medical Association from 1937 to 1940, when he became chairman for a year. He was also a member of the House of Delegates from the Section on the Practice of Medicine from 1944 to 1945. He wrote "The Coronary Arteries" in Cyclopedia of Medicine in 1932 and "Diseases of the Heart" in the textbook of medicine by Musser as well as numerous medical articles. He was editor in chief of the *American Heart Journal.*

Rachelle S. Yarros, La Jolla, Calif.; Woman's Medical College of Pennsylvania, Philadelphia, 1893; born in Russia, May 18, 1869; professor of social hygiene emeritus at the University of Illinois College of Medicine in Chicago, where she had been associate professor of obstetrics; fellow of the American College of Surgeons; formerly obstetrician at the Chicago Lying-In Hospital and Dispensary and consultant for the U. S. Public Health Service; for ten years at the West Side Hospital Dispensary in Chicago; served in the woman's division of the Illinois Council of National Defense during World War I, chairman of the Social Hygiene Council in Chicago and secretary of the Illinois Social Hygiene League; honorary member of the American Social Hygiene Association; author of "Modern Woman and Sex"; died March 17, aged 76, of heart disease.

Samuel Laban Ledbetter Jr. ⊕ Birmingham, Ala.; Johns Hopkins University School of Medicine, Baltimore, 1910; born in Birmingham in 1886; past president of the Jefferson County Medical Society; professor of clinical surgery at the Medical College of Alabama; member of the founders group of the American Board of Surgery; member of the Southern Surgical Association; fellow and member of the board of governors of the American College of Surgeons; served as vice president of the Southern Surgical Association; on the staffs of the St. Vincent's, Children's and Hillman hospitals; at one time clinical assistant in surgery at Western Reserve University School of Medicine, Cleveland, died March 10, aged 60, of a tumor.

Howard E. Jones ⊕ Circleville, Ohio; Medical College of Ohio, Cincinnati, 1876; born in 1853; taught physiology at Columbus Medical College for six years and later lectured on physiology at Kenyon College; past president and vice president of the Pickaway County Medical Society; on the staff of the Berger Hospital; a co-founder of the Ohio History Day Association; author of "Nests and Eggs of Birds of Ohio"; surgeon for the Pennsylvania Railroad, Norfolk and Western Railroad and the Chesapeake and Ohio Railroad; died December 12, aged 92, of senility.

Joseph de Benneville Abbott, Bristol, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1887; at one time medical examiner in the local public schools; died January 18, aged 79, of arteriosclerosis and myocardial failure.

Geza Manuel Aczel ⊕ Cincinnati; Magyar Királyi Pázmány Petrus Tudomanyegyetem Orvosi Fakultasa, Budapest, Hungary, 1909; died January 16, aged 63, of coronary thrombosis.

Morgan Kime Adams, Atascadero, Calif.; College of Medical Evangelists, Los Angeles, 1939; interned at the Los Angeles County Hospital, Los Angeles; began active duty as a first lieutenant in the medical corps, Army of the United States, on Nov. 1, 1940; later promoted to captain; served with the Third Division in the European Theater and in North Africa, receiving the Silver Star for heroic service in Sicily; relieved from active duty in April 1945; died in Riverside December 2, aged 30, of pneumonia.

Walter Henderson Allyn ⊕ Waverly, Ill.; Barnes Medical College, St. Louis, 1902; formerly mayor of Waverly; served during World War I and on the grade and high school boards of education; member of the visiting staffs of the Passavant Memorial Hospital and Our Saviour's Hospital, Jacksonville, where he died January 3, aged 70, of mesenteric thrombosis.

Charles Frederick Attwood ⊕ Topeka, Kan.; Kansas Medical College, Medical Department of Washburn College, Topeka, 1906; died in Kansas City, Kan., December 25, aged 63, of coronary occlusion.

Albert J. Auro ⊕ Brooklyn; Regia Università di Napoli Facoltà di Medicina e Chirurgia, Italy, 1923; on the staff of St. Catherine's Hospital, where he died January 1, aged 47, of pneumonia.

Jacob Valentine Baker, Edinburg, Ind.; Hospital College of Medicine, Louisville, Ky., 1898; member of the American Medical Association; died in the Bartholomew County Hospital, Columbus, January 11, aged 76, of injuries received when the automobile in which he was driving was struck by a truck.

William Evan Baker ⊕ Genoa, Ill.; Harvey Medical College, Chicago, 1904; past president of the Aux Plaines Branch of the Chicago Medical Society; for many years school physician in Genoa; on the staff of the Sycamore (Ill.) Hospital; died January 27, aged 82, of coronary occlusion.

Samuel Ralston Bates, Wagoner, Okla.; Vanderbilt University School of Medicine, Nashville, Tenn., 1897; member of the American Medical Association; served as president of the Wagoner County Medical Society; died January 11, aged 73, of valvular heart lesion and pulmonary tuberculosis.

Glenn Day Batten ⊕ Jackson, Tenn.; University of Tennessee College of Medicine, Memphis, 1933; fellow of the American College of Surgeons; served as vice president of the Tennessee State Medical Society; past president of the Madison County Medical Society; one of the founders and owners of the Doctors Hospital; on the staff of the Western State Hospital, Bolivar; died January 6, aged 42, of lobar pneumonia.

James E. Brittain, Searcy, Ark. (licensed in Arkansas in 1903); died December 12, aged 73, of cardiovascular renal disease.

Robert Henry Burke ⊕ St. Johnsbury, Vt.; the Hahnemann Medical College and Hospital, Chicago, 1902; health officer; member of the board of directors of the Brightlook Hospital; died December 1, aged 71, of carcinoma of the prostate.

Henry Herbert Clark, Woodbury, N. J.; University of Pennsylvania Department of Medicine, Philadelphia, 1891; county physician; died December 31, aged 76, of chronic bronchitis and myocarditis.

Benita Coolidge Davenport ⊕ Middleton, Mass.; Boston University School of Medicine, 1930; member of the American Sanatorium Association, American Trudeau Society and the National Tuberculosis Association; diplomate of the National Board of Medical Examiners; served as senior physician to the Essex Sanatorium, where she died December 20, aged 57, of pulmonary tuberculosis.

Denias Dawe, Monroe, Mich.; University of Michigan Homeopathic Medical School, Ann Arbor, 1889; served as mayor of Monroe, state senator and member of the state house of representatives; died December 21, aged 86, of hypostatic pneumonia and diabetes mellitus.

Nicholas Daniel Drummey ⊕ Boston; Harvard Medical School, Boston, 1887; an Affiliate Fellow of the American Medical Association; consultant on the staff of the Faulkner Hospital; died in Brookline December 17, aged 80, of arteriosclerosis.

Julius Karl Egge, Newark, N. J.; University of the City of New York Medical Department, 1890; also a graduate in pharmacy; an organizer and first secretary of the New Jersey College of Pharmacy; on the staff of St. Michael's Hospital; died December 19, aged 89, of arteriosclerotic heart disease and senility.

Anthon Flath, Stanley, N. D.; Trinity Medical College, Toronto, Ont., Canada, 1892; Victoria University Medical Department, Coburg, Ont., 1892; county health officer; died December 4, aged 82, of cardiac decompensation.

Andrew M. Flynn, Tacoma, Wash.; John A. Creighton Medical College, Omaha, 1904; member of the American Medical Association; on the staffs of the Tacoma General Hospital and St. Joseph's Hospital, where he died December 28, aged 73, of cerebral hemorrhage and arteriosclerosis.

Lee McCloskey Goodman ⊕ Jersey Shore, Pa.; Jefferson Medical College of Philadelphia, 1904; served in France during World War I; past president of the Lycoming County Medical Society; medical examiner for the Equitable Life Insurance Company; died recently, aged 64, of coronary occlusion.

James Joseph Goodwin, Clinton, Mass.; Jefferson Medical College of Philadelphia, 1892; member of the American Medical Association and the New England Surgical Society; fellow of the American College of Surgeons; surgeon, Clinton Hospital; consulting surgeon, Community Memorial Hospital, Ayer; died December 29, aged 80, of cerebral hemorrhage.

Francis Walter Gravelle, New York; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1911; member of the American Medical Association; fellow of the American College of Surgeons; attending obstetrician, Misericordia Hospital; director of obstetrics, St. Clare's Hospital, where he died recently, aged 59, of leukemia.

Augustus Clarkson Grove, Cadiz, Ohio; Starling Medical College, Columbus, 1889; served as coroner of Hamilton County and as director of the First National Bank in Jewett; died December 22, aged 81, of arteriosclerosis.

Karl Lowell Hayes, Farmersville, Ill.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1906; served during World War I; on the staffs of St. John's and Memorial hospitals, Springfield and St. Francis Hospital, Litchfield; died December 14, aged 63, of heart disease.

John Simon Jorczak, Chicopee, Mass.; College of Physicians and Surgeons, Boston, 1931; member of the draft board during World War II; died in Springfield December 25, aged 53, of coronary thrombosis.

Julius Eugene Kinney, Denver; University of the City of New York Medical Department, New York, 1885; member of the American Medical Association; died November 22, aged 89, of cardiovascular renal disease and prostatic hypertrophy.

William Adolph Kluegel, St. Louis; Washington University School of Medicine, St. Louis, 1908; member of the American Medical Association; at one time coroner of Perry County; member of the honorary staff of the Lutheran Hospital, where he died December 16, aged 62, of cardiac decompensation.

Francis Valentine Langenderfer ⊕ St. Paul; Chicago College of Medicine and Surgery, 1907; on the staffs of the Bethesda Hospital, St. Luke's Hospital and St. Joseph's Hospital, where he died November 26, aged 60, of hypertensive heart disease.

Jacob Lattman ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1917; served on the staff of the Willard Parker Hospital; died in the Mount Sinai Hospital December 18, aged 56, of metastatic carcinoma of the brain.

William Patrick Lawler, Lowell, Mass.; College of Physicians and Surgeons, Baltimore, 1886; member of the American Medical Association; past president of the Middlesex North District Medical Society; formerly a member of the local board of health and city physician; for many years on the staff of St. John's Hospital; died December 7, aged 86, of coronary occlusion.

Thomas Welford Lear, Coshocton, Ohio; Eclectic Medical Institute, Cincinnati, 1894; member of the American Medical Association; died in a local hospital recently, aged 74, of bronchopneumonia.

Edward De Witt Leonard ⊕ Newton, Mass.; Harvard Medical School, Boston, 1913; fellow of the American College of Surgeons; on the staff of the Newton Hospital, where he died December 15, aged 60, of hypertensive heart disease.

Roscoe Conklin Leinbach ⊕ Onaga, Kan.; University Medical College of Kansas City, Mo., 1907; president of the Pottawatomie County Medical Society; chairman of the county medical examining board during World War II; surgeon for the Union Pacific Railroad; died December 21, aged 61, of coronary thrombosis.

Oswald Henry Magaret, Papillion, Neb.; St. Louis College of Physicians and Surgeons, 1899; Omaha Medical College, 1900; served during World War I and as a member of the board of education; died December 28, aged 68, of coronary thrombosis.

Samuel Lee Magness, Baltimore; University of Maryland School of Medicine, Baltimore, 1902; served on the staff of St. Joseph's Hospital; died in Rock Hall November 27, aged 67, of cerebral hemorrhage.

Charles Henry Mason, Superior, Wis.; Minneapolis College of Physicians and Surgeons, 1899; member of the American Medical Association; past president of the Douglas County Medical Society; formerly city health officer; served as chief of staff at St. Joseph's Hospital, St. Mary's Hospital and St. Francis Hospital; past president and honorary member of the Rotary Club; died December 30, aged 72, of paralysis agitans.

Andrew Patterson McArthur, Moss Point, Miss.; Medical College of Alabama, Mobile, 1885; member of the American Medical Association; on the staff of the Jackson County Hospital, Pascagoula; died December 5, aged 83, of bronchopneumonia and cardiorenal disease.

Mary Elizabeth McMenamy, Brooklyn; University and Bellevue Hospital Medical College, New York, 1925; died in Danville, Va.; December 24, aged 47, of a tumor.

Douglas Gordon Meighen ⊕ Tampa, Fla.; Vanderbilt University School of Medicine, Nashville, Tenn., 1923; for many years associated with the U. S. Public Health Service; formerly county physician; district surgeon for the Atlantic Coast Line Railroad; died in the Municipal Hospital December 3, aged 47, of cardiac decompensation.

Jacob Edward Meisenbach ⊕ Staplehurst, Neb.; University of Nebraska College of Medicine, Omaha, 1904; served as president of the Seward County Medical Society; died in St. Elizabeth's Hospital, Lincoln, December 9, aged 69, of myocardial infarct.

Casper Otto Miller, New Market, Va.; University of Virginia Department of Medicine, Charlottesville, 1880; University of the City of New York Medical Department, New York, 1881; member of the American Medical Association; member of the state house of delegates, 1913-1914; died December 16, aged 88, of cerebral hemorrhage.

Julius Shuford Mitchell, Rome, Ga.; Vanderbilt University School of Medicine, Nashville, Tenn., 1894; died December 28, aged 72, of heart disease.

John H. Morrow, Merna, Neb.; Lincoln Medical College of Cotner University, 1902; member of the American Medical Association; died December 10, aged 73, of gastric hemorrhage.

Serenus Lazarus Newman ⊕ New York; Columbia University College of Physicians and Surgeons, New York, 1901; associate in obstetrics at the Beth Israel Hospital, where he died December 28, aged 68, of pulmonary embolism.

James Harper North Jr., New York; University of the City of New York Medical Department, New York, 1887; for many years associated with the New York Life Insurance Company; died December 1, aged 81, of coronary arteriosclerosis and thrombosis.

William Lucas Perry, St. Louis; Eclectic College of Physicians and Surgeons, Indianapolis, 1891; also a minister; died in December, aged 82, of coronary occlusion.

Roy Elliott Peters, Wymore, Neb.; Loyola University School of Medicine, Chicago, 1916; served as city and county physician; on the staff of the Lutheran Hospital in Beatrice; died in the Lincoln (Neb.) General Hospital, November 29, aged 60, following an operation for intestinal obstruction.

I. C. Power, Hiram, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1906; died November 16, aged 69, of carcinoma of the stomach.

George Richard Randall, Milwaukee; Queen's University Faculty of Medicine, Kingston, Ont., Canada, 1905; member of the American Medical Association; served during World War I; died in the Veterans Administration Facility December 12, aged 63, of coronary occlusion.

Charles William Robinson ⊕ Atchison, Kan.; Kansas Medical College, Medical Department of Washburn College, Topeka, 1913; past president of the Atchison County Medical Society; served as a member of the state board of health, city and county health officer and examiner for the U. S. Veterans Bureau; served during World War I; division surgeon for the Missouri Pacific Railroad; on the staff of the Atchison Hospital; died December 20, aged 55, of hypertensive cardiovascular disease.

Clarke Rogers, Indianapolis; Medical College of Indiana, Indianapolis, 1899; member of the American Medical Association; captain during World War I; member of the city board of health from 1933 to 1936 and in 1944; served on the city merit commission from 1941 to 1944; a trustee of the Soldiers' Home in Lafayette from 1920 to 1933; died December 21, aged 68, of coronary occlusion and cardiovascular disease.

Evan O. Shellhorse, Dalton, Ga.; Georgia College of Eclectic Medicine and Surgery, Atlanta, 1900; died November 19, aged 66.

Frank Siedenburg, Portsmouth, Ohio; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1907; member of the American Medical Association; since 1942 assistant medical examiner for the Norfolk and Western Railway; for many years on the staff of the Schirrman Hospital; died November 1, aged 65, of coronary occlusion.

Joseph Simecek, Swanton, *Neb.; Rush Medical College*, Chicago, 1894; member of the American Medical Association; died in the Misericordia Hospital, New York, November 2, aged 78, of cerebral thrombosis.

Frank Dale Smith ⊕ Rochester, Minn; University of Minnesota College of Medicine and Surgery, Minneapolis, 1905; died December 5, aged 64, of cerebral hemorrhage.

Lee Whitmore Smith ⊕ Butte, Mont.; University of Minnesota Medical School, Minneapolis, 1916; specialist certi*fied by the American Board of Otolaryngology; member of the* Pacific Coast Oto-Ophthalmological Society; fellow of the American College of Surgeons; on the staff of the Murray Hospital; died November 18, aged 53.

William Spickers ⊕ Paterson, N. J.; Columbia University College of Physicians and Surgeons, New York, 1906; born in Paterson, N. J., Aug. 17, 1883; fellow of the American College of Surgeons; past president of the Passaic County Medical Society; attending surgeon, Nathan and Miriam Barnert Memorial Hospital; attending thoracic surgeon, Bergen Pines *Hospital, Oradell; consulting surgeon, Hackensack Hospital,* Hackensack; died in Franklin Lakes December 28, aged 62, of coronary sclerosis and endocarditis.

***John Adams Stanfield**, Fort Worth, Texas;* Vanderbilt University School of Medicine, Nashville, 1920; member of the American Medical Association; died in the Methodist Hospital November 4, aged 50, of acute bronchopneumonia.

Richard Francis Tobin ⊕ Washington, D. C; Georgetown University School of Medicine, Washington, 1905; died December 21, aged 73, of cardiovascular renal disease.

Fred Charles Tyree ⊕ Agenda, Kan.; University of Kansas School of Medicine, Kansas City, 1906; died November 24, aged 62, of coronary occlusion.

Frederick Peterson Wainwright, Bridgeton, N. J.; Medico-Chirurgical College of Philadelphia, 1901; member of the American Medical Association; served as county physician, *died December 14, aged 83*, of cachexia and carcinoma of the lip

Alex S. Wolf, St. Louis; Medizinische Fakultat Wien, Vienna, Austria, 1900; died December 1, aged 75, of acute pulmonary edema.

James Trenton Word, Sweet Home, Ark. (licensed in Arkansas in 1903); member of the American Medical Association; physician to the *Arkansas* Confederate *Home*; died December 1, aged 71, of heart disease.

Nathan Albert York ⊕ Lisbon, Iowa; State University of *Iowa College of Medicine, Iowa City, 1900; died in* St. Petersburg, Fla., December 3, aged 79, of coronary occlusion.

Augustus G. Zimmerman ⊕ Chicago; Kaiser-Wilhelms-Universität Medizinische Fakultät, Strassburg, Germany, 1899; at one time assistant professor of clinical surgery at the University of Illinois College of Medicine and associate clinical professor of surgery at the Loyola University School of Medicine; *fellow of the* American College of Surgeons; on the staffs of the Grant Hospital, St. Elizabeth's Hospital and the Alexian Brothers' Hospital, where he died December 20, aged 67, of *glomerulonephritis.*

Capt. Harry Herbert Friedman
M. C., A. U. S., 1917-1945

Lieut. George Harley Moseley III
(MC), U. S. Navy, 1915-1945

Lieut. Arthur L. Rich,
M. C., A. U. S., 1917-1945

John Washington Thomason, East Point, Ga.; Southern College of Medicine and Surgery, Atlanta, 1912; Atlanta School *of Medicine, 1913; member of* the American Medical Association; died December 19, aged 65.

KILLED IN ACTION

Harry Herbert Friedman, Brooklyn; Georgetown University School of Medicine, Washington, D. C., 1943; interned at the Cumberland Hospital; diplomate of the National Board of Medical Examiners; began active duty as a first lieutenant in the medical corps of the Army of the United States in January 1944 and later promoted to captain; killed in action in Germany March 24, 1945, aged 27.

George Harley Moseley III ⊕ Passed Assistant Surgeon, Lieutenant, U. S. Navy, Metropolis, Ill.; University of Illinois College of Medicine, Chicago, 1940; interned at the U. S. Naval Hospital in Mare Island, Calif.; commissioned an acting assistant surgeon, lieutenant (jg) in the U. S. Navy on Aug. 15, 1939; promoted to lieutenant; missing in action as of March 1, 1942, when the U. S. S. *Asheville*, on which he was serving, was reported lost as a result of enemy action in the Asiatic Area; aged 30; presumptive date of death Nov. 25, 1945, according to the Navy Department.

Arthur Lynton Rich, Great Neck, N. Y.; New York Medical College, Flower and Fifth Avenue Hospitals, New York, 1942; interned at the Morrisania City Hospital in New York; diplomate of the National Board of Medical Examiners; began active duty as a first lieutenant in the medical corps, Army of the United States, on Aug. 13, 1943; posthumously awarded the Bronze Star Medal "for heroic action in connection with military operations against the enemy from Feb. 28, 1945 to March 6, 1945 in Germany"; died in Germany March 7, 1945, aged 27, of wounds received in action.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 2, 1946.

British Medical Association Prepares to Fight the Government

The British Medical Association is preparing to fight the government if it should prove obdurate to the views of the medical profession. The council of the association will establish an emergency guaranty fund to further the cause of the medical profession in major disputes with the government. The fund will be divided as follows: Fund A will provide for administrative, propaganda and similar expenses. Fund B will be used for these purposes and also for compensation of individual practitioners who suffer exceptional financial hardship (because of adherence to the cause of the profession). The British Medical Association has guaranteed $400,000 to fund A. Every member of the profession is urged to guarantee at least $100. The fund will remain in the form of guaranties to be called in at the discretion of the council of the British Medical Association. Should fundamental disagreement arise with proposals of the government, the medical profession will attempt to influence public opinion in order that pressure may be brought on Parliament to modify objectionable features of the bill. If this fails it is possible that physicians will not work under the new service. Treatment of patients would not be refused but would be continued outside the new service. If payment of fees is refused by patients on the basis that the bill entitles them to free treatment, then it has been suggested that the treatment will be given free of charge and the physician compensated from the fund.

Appalling Conditions in India's Dairy Industry

A report to the government of India by Mr. R. A. Pepperall, chief executive officer of the British Milk Marketing Board, reveals appalling conditions in India's dairy industry. The efficiency of the industry is considered by the author to be the lowest in the world. Adulteration by adding water to milk was usual at all stages of distribution from producer to consumer. In Calcutta the added water exceeded 25 per cent. The conditions of milk production in Indian stables are described as "starvation of stock, squalor, filth, ignorance or indifference toward hygienic principles, and revolting personal habits, allied to official apathy." At one Bombay stable housing hundreds of animals, in which conditions might be regarded as normal, the author observed crows feeding from a dead buffalo and then drinking from milk containers. At another stable the buffaloes were allowed to immerse themselves daily in a backwater in which was deposited the urine of 500 animals and in which there were dead animals. Udders were not washed before milking. Official reports showed a bacteria count of 36 million per cubic centimeter for Bombay milk. Although milk production in India is declining, the population is increasing. The price of milk is the highest in the world. The author points out the unparalleled dimensions of the problem of reorganizing an industry consisting of 22 million illiterate and poverty stricken producers with semistarved livestock.

Restoration and Enlargement of the Royal College of Surgeons

At the Hunterian dinner of the Royal College of Surgeons the president, Sir Alfred Webb-Johnson, announced that plans were being made for restoration of the famous Hunterian Museum, which had been damaged by German bombs. Help and encouragement had been received from all parts of the world. The Bernhard Baron trustees provided an endowment for experimental research, so that in their preoccupation with more material things this work would go on without interruption. It was decided that the museum needed men to take charge of the sections of anatomy and of pathology and they were fortunate to secure the services of Professor Willis from Melbourne and Professor Wood-Jones from Manchester. Sir William Collins had provided endowments of $1,000,000 for the scientific departments. In providing the means for carrying out their plans the response of fellows of the college had been inspiring at home and abroad, and also help had been received from all quarters of the profession. The plans provided for an enlarged museum space, extension of research, rooms for separate study, common rooms for postgraduates from all parts of the world, extensions of the library, and a great conference hall. The Wellcome trustees had made a magnificent gift, and valued equally with the gift were their collaboration and the help of Sir Henry Dale, so that a group of medical museums might be established in London that would be a mecca for students of all countries. Thus they carried on the great Hunterian tradition.

Penicillin Treatment of Syphilis in the British Army

Lieut. Col. James Marshall recently discussed the use of penicillin in the treatment of syphilis at a meeting of the Section of Experimental Medicine and Therapeutics of the Royal Society of Medicine. Although at least five years is required to evaluate any method of treating early syphilis, large scale experiments have allowed certain conclusions to be drawn. Treatment consisted mainly in intramuscular injections of aqueous solutions of penicillin. Almost independently of the total dosage spirochetes disappeared from surface lesions in about twelve hours, lesions healed rapidly and serologic reactions became negative. In 270 cases of early syphilis treated with 2,400,000 units of penicillin for seven and one half days and followed for six months the failure rate was 8 per cent, in contrast to a 2 per cent failure rate in an equal number of cases treated by the twenty day arsenoxide and bismuth method. Based on an American observation of probable synergism between penicillin and arsenoxide, the author has adopted a combined method of penicillin (2,400,000 units in seven and one half days) and arsenic (ten daily injections of oxophenarsine hydrochloride). Arsenical reactions were rare. If reactions did occur, arsenic therapy was discontinued and the total dose of penicillin was then increased to 4,000,000 units (one hundred injections of 40,000 units each). Approximately one third of these cases have been followed for four to six months after completion of treatment. Three cases of mucocutaneous relapse have occurred but none have shown serologic relapse. From these results the author concludes that combined therapy is preferable to penicillin alone. This method of treatment is now routine in British army hospitals.

An Industrial Resettlement and Research Bureau

The great efforts that have been made during and since the war for the rehabilitation and resettlement of the disabled have been described in previous letters to THE JOURNAL. At a meeting of the British Council for Rehabilitation it was resolved that an industrial resettlement and research bureau should be established. It was suggested that a committee of twelve industrialists be formed with power to include additional professional and technical experts to frame the terms of reference and structure of the bureau for later approval. There are approximately 2,000,000 disabled men for whom everything possible should be done to enable them to compete as nearly on equal terms as possible with the able bodied. Mr. Aneurin Bevan, minister of health, stated that ill afforded enormous waste was involved in not getting the disabled into work which they could perform.

SWEDEN

(From Our Regular Correspondent)

STOCKHOLM, March 2, 1946.

Americans Elected Members of Swedish Academy of Science

At a recent meeting Prof. H. S. Gasser of the Rockefeller Institute, New York, and Prof. E. D. Merrill, director of the Arnold Arboretum of Massachusetts, were elected members of the Swedish Academy of Science. D. M. S. Watson of London, professor of zoology and comparative anatomy, was also honored. At the same meeting several grants for medical research were announced, including one of 2,200 kronor to Dr. Nils Emmelin of Lund for an investigation of histamine in blood plasma.

As a subsequent meeting of the academy the following grants from the Nobel Fund were made: 4,000 kronor from the physics fund to Dr. Sten von Friesen of Uppsala for a study of the structure of the lower border of the continuous x-ray spectrum; 8,400 kronor from the same fund to Prof. Lise Meitner for researches in nuclear physics and 4,000 kronor to Prof. O. Klein for a continuation of studies of the quantum treatment of the magnetic properties of crystals. From the chemistry fund Prof. The Svedberg was granted 9,000 kronor for a continuation of investigations of the mass and structure of protein molecules and their reactions; Prof. H. von Euler, 9,500 kronor for study of metabolism in isolated cell nuclei and the histones of certain nucleic acids; Prof. Gunnar Hagg, 4,000 kronor for x-ray researches in crystals; Prof. Arne Fredga, 5,000 kronor for work on optically active compounds, and Prof. Karl Myrbäck, 5,000 kronor for the purchase of a Charples supercentrifuge.

Serious Lack of Medicines in Finland

The present deficiency of drugs in Finland is said to constitute a direct threat to public health. Dozens of prescriptions are left unfilled daily because of the lack of suitable ingredients. The hospitals are having great difficulty in treating their patients, and although ether is manufactured in Finland, the iodine needed for surgery is completely gone. A great many drugs previously were imported from Sweden, but currency difficulties have curtailed this source. England is at present unable to ship drugs to Finland, and the Finns had placed their hope in America. However, the trade agreement with the United States is not clear, so that the situation promises to be difficult for many months to come.

Danish Tobacco Cause of Oral Inflammation

A widespread form of oral inflammation, difficult to treat, is troubling physicians and dentists in Denmark. It is believed that its severe character is due to the poor quality of the Danish tobacco, which irritates the mucous membrane, leaving it less resistant to infection. Many patients, not realizing that they are suffering from this inflammation, merely feel extremely tired, and Danish doctors believe that in these cases the infection has become generalized.

Swedish Doctors Assist Their Neighbors

Swedish physicians and medical associations have contributed generously to a fund which has made it possible for their Scandinavian colleagues from Finland, Norway and Denmark to study medicine in Swedish schools and hospitals. This aid is also extended to physicians from neighboring countries attending conventions in Sweden, who are allowed to take only a small amount of money with them out of their own countries (barely enough to support them for a day).

Committee for Testing the Durability of Drugs

The Committee for the Testing of the Durability of Drugs has recently been formed, consisting of representatives from the Royal Pharmaceutical Institute, the Federal Pharmaceutical Laboratory, the Military Apothecary, the pharmaceutical industry and apothecaries' organizations. The committee will collect literature on the subject, particularly on those drugs whose lasting qualities are important for economic or other reasons, and then begin experimentation. The present literature on the subject is meager, and continued investigation is needed. It is hoped that considerable waste may be avoided by knowledge of how long drugs can be safely stored without loss of potency.

Chilean Pediatrician in Stockholm

Dr. Gabriel Solar, pediatrician, the daughter of Chile's chargé d'affaires in Oslo, has been sent to Sweden by the Chilean government to study the methods used in Swedish children's hospitals and pediatrics. She will also study in Norway before returning to Chile.

Swedish Association of Industrial Physicians Established

In February, Swedish industrial physicians established an association, as a branch of the Swedish Medical Association, to further knowledge and investigation in the field of industrial health.

Cellophane Tubes for Blood Transfusions

A satisfactory cellophane tube is now produced in Sweden for blood transfusions which will avoid the difficulties encountered by the use of rubber tubing.

PARIS

(From Our Regular Correspondent)

Feb. 26, 1946.

Epidemic of Plague in Corsica

On February 14 at a meeting of the Society of Comparative Biology, Lucien Bernard, inspector of public health for the Department of the Seine, described an epidemic of plague which occurred in Adjaccio, Corsica, during the summer of 1945. Bubonic plague had been unknown there until this time. Between May 11 and June 13, 1945 there were 13 cases, with 10 deaths. The disease was introduced by infected rats that arrived on ships from the Mediterranean basin, where it was epidemic at the time. The island was quarantined and the entire population of Ajaccio, 25,000 inhabitants, was vaccinated with a vaccine of killed bacilli prepared by the Pasteur Institute. Two vaccinations of 1 and 2 cc. were given at an interval of eight days. Many thousand rats were systematically destroyed by squill and arsenic anhydride. Disinfestation was performed by special teams with 5 per cent DDT powder. It was found that one tenth of the rats were of the Rattus alexandrinus type, which propagates plague. There was an average of two fleas per rat, 70 per cent of the fleas being also of the type which transmits plague. The author reported that the epidemic probably was stopped because of the small number of fleas resulting from climatologic conditions in 1945 and the sanitary measures instituted. At the same meeting Girard called attention to the efficacy of vaccination against plague with attenuated living bacilli. Robic and Girard had used this vaccine successfully in Madagascar where 800,000 inhabitants were vaccinated annually for several years. Use of the vaccine over a period of eight years proved that it was innocuous and that its administration caused a decrease of morbidity which was parallel with the number of vaccinations.

New Technic of Infiltration of Stellate Ganglion

Seze, Ryckwaert, Guegen and Roisin have described a technic of infiltration of the stellate ganglion based on two years' experience with a thousand infiltrations and radiologic evidence. The authors point out that the problem involved is to reach the stellate ganglion by the shortest route without pain or accident. They made preliminary studies on cadavers. The patient is placed on his back with the head turned at a 45 degree angle to the side opposite the infiltration site. Three lines are drawn, the first from the edge of the tragus to the medial end of the clavicle, the second parallel and one fingerbreadth (1 to 1.5 cm.) posterior to the first line, the third parallel and two fingerbreadths superior to the clavicle. The site of injection is at a point where the second line intersects the third line. Subcutaneous planes are anesthetized, a thin needle (of 0.5 mm. bore and 5 to 6 cm. long) being used. The jugular and carotid structures are pressed back toward the sternum by the left index and middle fingers placed above and below the point of injection. With the right hand the needle is then inserted straight back vertically or at a slight angle of 15 degrees for 3 or 4 cm. until the internal extremity of the neck of the first rib is reached. Procaine hydrochloride 1:200, 20 to 25 cc., is injected. The patient is then placed in a half sitting position so that the solution can pass along the stellate ganglion. The authors report that the method is painless and because of its ease avoids certain drawbacks of other methods. Its harmlessness has been established. Painful lesions of the brachial plexus are unusual, and no pleuropulmonary wounds have occurred. Danger to large blood vessels is avoided by the position of the head and pressure of underlying structures away from the point of injection. In about one of twenty to thirty infiltrations the vertebral artery is encountered. The needle is then withdrawn and pressure with a tampon is applied for a few minutes. The operation may then be repeated again at a more oblique angle.

BRAZIL

(From Our Regular Correspondent)

Rio de Janeiro, March 8, 1946.

The Anemia from Antiplatelet Serum and from Estradiol

Drs. Walter Cruz, E. M. da Silva and R. Pimenta de Mello, from the Division of Hematology of the Oswaldo Cruz Institute of Rio de Janeiro, studied the relation between thrombocytopenia, anemia and the hemorrhagic intestinal lesions caused by estradiol benzoate and antiplatelet serum.

Estradiol benzoate in large doses (0.1 mg. per kilogram) produces thrombocytopenia in dogs after four to six days. As a result of the decrease of platelets in the circulating blood (one third to one tenth of the normal) a picture of purpura appears, with predominance of intestinal hemorrhages followed by severe anemia. When active antiplatelet serum is administered to dogs, thrombocytopenia is rapidly obtained within twelve to forty-eight hours. Intestinal lesions of purpura are conspicuous, and hemorrhages with acute anemia are usually present. These results seem to indicate the identity of the mechanism of anemia produced by estradiol benzoate and by antiplatelet serum. The practical value of the determination of occult blood in feces of patients with thrombocytopenic purpura is emphasized by the authors as an aid to the diagnosis of crises of Werlhof's disease.

The Montenegro Reaction in Leprosy

The concomitant occurrence of leprosy and cutaneous leishmaniasis has been reported by several investigators and is important in the early diagnosis of both diseases. Dr. S. C. Arantes of São Paulo recently published a report of investigations of the Montenegro intradermal reaction in patients with leprosy, which, in summary, showed that (1) the Montenegro reaction was negative in all cases of leprosy without previous history of leishmaniasis, (2) the reaction was always strongly positive in leprosy patients with a probable history of leishmaniasis twenty or more years earlier, (3) the reaction was not modified by leprosy in cured cases of leishmaniasis and (4) a negative reaction was obtained in 1 patient in whom leishmaniae were demonstrated in the ulcer. These results have been confirmed by Dr. Josefino Aleixo and Dr. Joel T. Coelho, Division of Leprosy, Minas Gerais State Department of Health, in a study of the Montenegro reaction in 23 selected cases of leprosy. However, in the latter series a positive Montenegro reaction was found in 1 patient with an ulcer presenting characteristics of both leprosy and leishmaniasis with many Hansen bacilli but no leishmaniae. The diagnostic value of the Montenegro reaction is emphasized for all cases in which there is a possibility of both leishmaniasis and leprosy.

Retirement of Prof. Henrique Roxo

Dr. Henrique Belfort Roxo, professor of clinical psychiatry and director of the Psychiatric Institute of the University of Rio de Janeiro, has reached the retirement age after thirty-five years of active duty at the university. Among many papers published by Dr. Roxo particular mention should be given to the report presented to the seventeenth International Congress of Medicine in London in 1913 on "Chronic Hallucinatory Systematized Delirium," which was considered at the time a new disease entity. In 1921 he published the first edition of his "Textbook of Psychiatry," which is a classic work for medical students in Brazil.

Brief Items

The State Psychiatric Hospital at Salvador, state of Bahia, has been recently improved and remodeled, and an outpatient department has been opened.

The São Francisco de Assis x-ray institute of the city of São Paulo is now offering a postgraduate course in clinical radiology, to be given in February. Drs. Rafael de Barros, Olavo Pazzanese, Carl Fried and Nelson de Carvalho will be in charge of the lectures and practical demonstrations included in the course.

Drs. Alfredo Monteiro, A. F. Costa Junior, Aurelio Monteiro and Campos da Paz Filho have been elected to the governing board of the Rio de Janeiro Medical and Surgical Association.

Drs. Hugo Firmeza, Rubens Siqueira, Abelardo Tavares and Roberto C. da Rocha have been elected to the governing board of the Brazilian Association of Industrial Medicine.

A new leprosarium bearing the name of Padre Damião has been recently opened at Ubá, state of Minas Gerais. It is a modern and well equipped institution for the care of about 1,500 patients.

A new foundation has been organized with a gift made by Mrs. Anita P. D'Angelo to build and operate a general hospital in the city of São Paulo. The institution will bear the name of Sabbado D'Angelo, a late Italian industrialist of the city.

The Department of Hospitals of the city of Rio de Janeiro has completed the plans for the building of a 400 bed general hospital at Meyer, an important northern suburb of the city.

The Special Service of Public Health, operated by the Brazilian and the American governments through the Office of Inter-American Affairs, has opened two health centers in the towns of Valladares and Aymorés, state of Minas Gerais, which will function as public health agencies for the two towns. The service has cooperated in the construction of water supply and sewerage systems for both towns.

Marriages

John Richard O'Brien, Niagara Falls, N. Y., to Mrs. Dorothy Newton Worcester in Lebanon, Mo., February 2.

Franklin Caswell Miles, Nashville, Tenn., to Miss Eugenia Frances Newsom of Sandersville, Ga., February 11.

James Edward Wheeler, Columbia, S. C., to Miss Carol Jane Allen of New York in Glencoe, Md., March 4.

Claude Henry Workman Jr., McCormick, S. C., to Miss Ruth Bennett of New Orleans, February 17.

Francis Preston Owings, Union, S. C., to Miss Carrie Shell Cathcart in Winnsboro, February 23.

Frank Princi, Boston, to Miss Eva Demchak in Osceola Mills, Pa., January 2.

Benedict Trach to Miss Dorothy Bennett, both of Minneapolis, February 12.

Correspondence

BRUCELLA MELITENSIS ISOLATED FROM SWINE TISSUES IN IOWA

To the Editor.—Since publication of the article entitled "Occurrence of Brucella Melitensis in Iowa" in the January 12 issue of The Journal, page 72, investigation of a case of brucellosis caused by Brucella melitensis and of the suspected source of infection has led to the isolation of Brucella melitensis from tissues of hogs in Iowa.

W. N., a man aged 32, a farmer living in Humboldt County, Iowa, had onset of illness due to brucellosis in September 1945. On September 17 Brucella melitensis was isolated from the blood clot of the specimen, which the attending physician forwarded to the State Hygienic Laboratory for the agglutination test.

The patient gave the history of direct contact with cows and hogs but not with sheep or goats. Through the Bureau of Animal Industry and State Department of Agriculture a veterinarian was authorized to secure blood specimens from cows and hogs. Cows numbering 18 showed negative agglutination tests; 4 sows were tested, 2 of which proved to be reactors.

Infected sows were sold from this farm before arrangement was made for slaughter and laboratory study. Attention was then directed to 115 "spring pigs," some of which were littered by infected sows. Of particular interest were 20 gilts, which at the time of inquiry (Dec. 20, 1945) weighed between 250 and 300 pounds. The owner (W. N.) had planned to use these animals for breeding purposes but consented to have them blood tested. When 8 of the gilts showed positive agglutination reactions, no persuasion was needed to induce the farmer to dispose of some of his hogs.

Through the courtesy of the managers of the Tobin Packing Company, Fort Dodge, special arrangement was made for slaughter of the 20 gilts from the farm of W. N. The animals were killed on Feb. 13, 1946, at which time the spleen, uterus, a kidney, a portion of the liver and various lymph glands were removed from "reactor" and "nonreactor" hogs. The tissues were transported at once to the Veterinary Research Laboratory at Ames for cultural study. During succeeding days one of us (S. H. M.) isolated twelve strains of Brucella from the swine tissues, four from reacting and eight from nonreacting gilts. Three strains were recovered from maxillary lymph glands, three from hepatic lymph nodes, five from unidentified lymph glands and one from the spleen. Bacteriologic examination of the uteri, livers and kidneys remained negative.

All of the twelve strains as submitted to the State Hygienic Laboratory proved to be Brucella melitensis, based on the following characteristics: (1) nonmotile, gram negative, pleomorphic coccobacilli; (2) agglutination of organisms by antimelitensis serum; (3) better growth with ordinary atmospheric conditions than under 10 per cent carbon dioxide; (4) a trace of hydrogen sulfide in twenty-four hours but none in forty-eight, seventy-two and ninety-six hours, and, lastly, (5) growth in twenty-four, forty-eight and seventy-two hours on tryptose agar plates containing basic fuchsin 1:25,000 and on the same medium containing thionin 1:25,000.

This is the first time in Iowa and as far as known in the United States that Brucella melitensis has been isolated from tissues of naturally infected swine.

Valued assistance in the steps which led the way to these findings was rendered by Dr. Charles L. Jones, Gilmore City; Mrs. Lynn Freifeld, senior bacteriologist, State Hygienic Laboratory, Iowa City; Mr. Fred Clark, manager and Mr. Joe Kelly, assistant manager, Tobin Packing Company, Fort Dodge; J. A. Barger, D.V.M., inspector in charge, Bureau of Animal Industry, Des Moines; C. C. Franks, D.V.M., state veterinarian, Des Moines; E. H. Pick, D.V.M., Pocahontas; Dr. M. T. Johnson, M.P.H., medical director, District Health Service No. 5, Fort Dodge.

Irving H. Borts, M.D., Iowa City.
Director, State Hygienic Laboratory.

Sam H. McNutt, D.V.M., Ames, Iowa.
Professor of Veterinary Research, Iowa State College.

Carl F. Jordan, M.D., Des Moines, Iowa.
Director, Division of Preventable Diseases and Epidemiologist, Iowa State Department of Health.

PENICILLIN IN AGRANULOCYTOSIS

To the Editor:—Our recent experience with penicillin in the treatment of thiouracil induced agranulocytosis has created in our minds a point of view at variance with the report of the Council on Pharmacy and Chemistry of February 9. We are referring to the recommendation that a daily dosage of 500,000 units is the desirable method of treatment in these cases.

In 2 recent cases prompt improvement occurred only when the dose of penicillin was increased to 1,000,000 units or more daily. It is our conviction that these larger doses of penicillin represent adequate therapy and that the dosage of one-half million units daily is a suboptimal amount of penicillin.

We urge the acceptance of this recommendation by the Council on Pharmacy and Chemistry and trust that this communication will come to the attention of men employing thiouracil in the treatment of hyperthyroidism.

Martin G. Vorhaus, M.D.
Harold H. Rothendler, M.D.
New York.

To the Editor:—In a recent article in The Journal by Boland, Headley and Hench on the "Treatment of Agranulocytosis with Penicillin" the authors cite 10 cases, including 1 of their own, which have been successfully treated to date. In their review of the literature the authors apparently failed to note a case reported by us (Russek, H. I.; Smith, R. H., and Zohman, B. L.: Subacute Bacterial Endocarditis Complicated by Agranulocytosis: Report of Case with Recovery, *Ann. Int. Med.* **22:**867 [June] 1945). In this instance a white man aged 21 with subacute bacterial endocarditis was treated with sulfonamides, from which he developed agranulocytosis. Blood culture remained persistently positive for Streptococcus viridans. Recovery from both diseases, the first to be recorded, resulted from the administration of 8,400,000 units of penicillin over a period of twenty-one days.

Henry I. Russek, M.D.,
U. S. Marine Hospital,
Staten Island, N. Y.

TREATMENT OF EPILEPSY

To the Editor:—In the March 2 issue of The Journal on page 565 De Jong in an article on the treatment of epilepsy makes the statement that "a ketogenic diet has been advocated but its efficacy is doubtful."

This is a misstatement of fact which should be promptly corrected. There is no doubt of the efficacy of the ketogenic diet in the minds of those who have used the diet or are familiar with the literature. The author quotes two references to support his statement. If he has access to his first reference, by Wilder, he will find that this article merely presents a suggestion as to the possible value of a ketogenic diet. In the second reference there are statistics to prove that the ketogenic diet was effective in 47 per cent of the children treated. There are many references in the literature since 1938 The most concrete evidence of the value of the ketogenic diet is presented in the articles which indicate a definite improvement in the electroencephalograms of patients under treatment with the diet. There are a large number of cases reported which have been treated for long periods. The ketogenic diet has been the only effective treatment of petit mal in children. Until now drugs have been totally ineffective. As most children with petit mal either have, or eventually develop, grand mal epilepsy, the greatest value of the ketogenic diet lies in the fact that it will control all the manifestations of this disease, including grand mal. It will never aggravate any one manifestation of the disease. The most effective argument for the ketogenic diet is the following quotation from "The Practice of Pediatrics" (Hagerstown, Md., W. F. Prior Company, 1945) volume 4, chapter 12, page 31, under the heading "Dietary Regimen":

> For the majority of children with genuine epilepsy this would seem at the present time to be the most important form of therapy because it apparently tends to alter the physicochemical state or the metabolic activity of the body in a direction favorable to correction of the underlying disturbance in brain cell physiology.

M. G. Peterman, M.D., Milwaukee.

Bureau of Investigation

CEASE AND DESIST ORDERS

Abstracts of Certain Federal Trade Commission Releases

The work of the Federal Trade Commission in helping to protect the public against misrepresentation or fraud in the medical as well as other fields, has been greatly extended by the provisions of the Wheeler-Lea Amendment to the Federal Trade Commission Act. The Food, Drug and Cosmetic Act of 1938 increased the Food and Drug Administration's control of the advertising claims and statements made on the label of a medicine or on the carton or in the accompanying leaflet, whereas what might be termed collateral advertising, that which appears in circulars, newspapers and magazines and over the air, comes more actively under the purview of the Federal Trade Commission by virtue of the Wheeler-Lea Amendment.

The Journal has at various times commented on the activities of the Federal Trade Commission in this connection, even before the Wheeler-Lea Amendment gave it its added powers. In some cases the Commission may accept from the person or concern involved a stipulation that the objectionable practices or claims cited will be discontinued. In other cases the Commission issues what is known as a Cease and Desist Order, in which the individual, manufacturer or distributor cited is ordered to cease and desist from practices which have been declared objectionable. In some cases the claims cited have been discontinued by the firms several months (or even longer) before the issuance of the order. Abstracts of some of the orders issued in 1943, 1944 and 1945 follow in this form: name of product, name of distributor, date of issuance of complaint, date of issuance of Cease and Desist Order and terms of order.

Brooks Rupture Appliance and Automatic Air Cushion.—Brooks Appliance Company, Harold C. Brooks and Craig W. Brooks, Marshall, Mich., New York and Chicago; complaint issued Nov. 2, 1943; order issued Jan. 29, 1944. Order directed respondents to discontinue any advertising representing that the devices mentioned constitute a competent remedy or cure for hernia. Order also directed Fogarty-Jordan-Phelps Company, Chicago, an advertising agency, to discontinue the false and misleading representations that the truss in question will do away with all discomfort and worry caused by hernia, enable the wearer to undertake and enjoy hard work and strenuous play, that in every case it will hold reducible hernia securely and comfortably in place at all times, can be depended on to assist nature in healing hernia to the extent that the need of a truss or other support will be eliminated; that it will make strangulation of hernia impossible, and that the device adjusts itself to every movement of the body, and its air cushion attachment is fully automatic and clings to any spot to which it is adjusted. The order further directed the respondents to cease representing that another Brooks device, the "Natural Uterine Supporter," is an effective treatment for uterine displacements and will relieve or cure ailments and diseases caused by displacements of the womb.

Dupree Nostrums.—Imperial Drug Exchange, Inc., trading as Dupree Medical Company, and its president, Abraham Parodney, New York; complaint issued Dec. 11, 1943; order issued May 17, 1944. Order directed respondents to discontinue any advertisement which represented that their preparations, "Dupree Brand New Formula Pills" and "Dupree Pills, Double Strength, New and Improved Formula," are a competent and effective treatment for delayed menstruation arising from colds, nervous strain, poor nutrition, anemia, over-exposure, change of climate, or from any other cause; or which did not reveal that these products should not be used in the presence of abdominal pains, nausea or other symptoms of appendicitis. It was provided, however, that it would be sufficient for such advertisement to confine its warning to the statement, "Caution: Use only as directed," if the same warning should appear on the label.

Gold Medal Haarlem Oil.—Leonard Block, Melvin Block and Betty Roberts, trading as Gold Medal Haarlem Oil Company, Jersey City, N. J.; complaint issued Nov. 7, 1942; order issued April 17, 1944. Order directed respondents to discontinue the following misrepresentations in the advertising of the product variously designated as "Gold Medal Haarlem Oil" and "Gold Medal Haarlem Oil Capsules": That its use will restore the kidneys or bladder to healthy activity; that it is a safe, effective and competent treatment for conditions described as weak kidneys, irritations of the bladder, aches, sciatica, neuritis, neuralgia, lumbago, nervousness, dizzy spells or swollen ankles; that such conditions are symptomatic of ailments which are treated successfully by the use of this preparation; that it is a remedy or cure for ailments or diseases of the kidneys, or that it has any therapeutic value in treating those conditions. The order further directed the respondents to discontinue any advertisement that did not reveal that the indiscriminate use of this product by persons whose kidneys are diseased or injured might interfere with their proper functioning, and that prolonged administration might injure normal kidneys. The order provided, however, that it would be sufficient for such advertisement to state "Caution: Use only as directed" if the instructions for use on the label contain a warning to the same effect.

Helena Volay Face Oil.—Helen E. Hoeck, trading as Helena Volay Cosmetics, Needles, Calif.; complaint issued May 28, 1943; order issued Jan. 25, 1944. Order directed respondent to cease representing that Helena Volay Face Oil will significantly improve the skin or cause it to become firmer or appear more youthful, or that it will effectively treat or prevent the formation of wrinkles and sagging tissues. The order also was directed against the Chicago Union Advertising Agency, Inc., of Chicago, which prepared and handled the advertising.

Kaytonik.—Joseph P. Kayatta and Kay Laboratories, Inc., Providence, R. I.; complaint issued Sept. 28, 1943; order issued Jan. 24, 1944. Order directed respondents to cease representing that Kaytonik is a preventive of, or effective treatment for colds, will prevent a cold from developing into la grippe, influenza or pneumonia, or will build up health, strength or bodily resistance to disease or destroy germs. Order further directed respondents to discontinue using the word Kaytonik as a trade name or otherwise representing that the product is a general tonic, and cease using the word "laboratories" or any other term implying that respondents own, operate or control a laboratory equipped for compounding medicinal preparations, and for research in connection therewith.

Pheno-Isolin Products and Dialin.—Howard J. Force, former president and manager of the Scientific Manufacturing Company, Inc., and later a partner in the Force Company, both of Scranton, Pa.; complaint issued April 11, 1941; order issued May 13, 1944. Order directed Force and his agents to cease representing that Pheno-Isolin or Pheno-Isolin Ointment is a powerful germicide of value in surgery or in treatment of peritonitis, gangrene or similar ailment; that they have any value in the treatment of stiffening of the joints, colds, sinus infections, eczema or burns; or that Dialin is efficacious for diabetes or has any value in the treatment of that condition. In an earlier action of the Federal Trade Commission against Force's concern, that outfit stipulated that it would discontinue on its labels or in advertising matter misrepresentations to the effect that Pheno-Isolin possesses antitoxic properties or acts as a "sure" germicide in the treatment of certain maladies, or that, when taken as directed, the product destroys infection, dissolves all other kinds of bacteria, or accomplishes some other things. In The *Journal* April 25, 1942, page 1512, appeared a lengthy discussion of actions brought by various government agencies against the Scientific Manufacturing Company and Howard J. Force, including a Post Office fraud order debarring the concern and the man from use of the mails for fraudulently selling its Dialin for diabetes, and a few months afterward a supplementary order covering the name H. J. Force, who had been found to be continuing the business under his own name. In the fraud case a government chemist testified that Dialin was a mixture of magnesium carbonate, sodium bicarbonate, glycerin, plant material (including rhubarb, ipecac and peppermint) a small amount of alcohol, and traces of iron, phosphate, citrate and calcium. Pheno-Isolin, according to a government chemist who testified in a case brought against the concern for violating the earlier Food and Drugs Act, was nothing more wonderful than turpentine, camphor, menthol and resin dissolved in an oil. Yet it was promoted for such conditions as cancer, boils, carbuncles, neuritis, coughs, and some other things!

Von's Pink Tablets.—George and Sadie Von Nieda and Florence Beebe, trading as Von Drug Company, Miami, Fla.; complaint issued Feb. 12, 1942; order issued Jan. 31, 1944. Order directed respondents and their agents and distributors (trading as Philadelphia Von Company, Chicago Von Company and the like) to discontinue any advertisements which represented that the tablets are an effective treatment for stomach ulcers, that they will afford prompt relief to a person suffering from a long-standing case of this condition, restore the stomach content to a better chemical balance, prevent or tend to prevent stomach ulcers from forming, or effectively coat stomach ulcers or denuded surfaces in the stomach with a protective coating.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Limitation of Action; False Certification of Insanity.—The plaintiff was committed to the state hospital as a result of the defendant's certification that she was insane. Contending that such certification was false and fraudulent, she filed suit for damages against the defendant physician. From an order dismissing her petition, plaintiff appealed to the Supreme Court of Missouri.

The plaintiff alleged that on Sept. 17, 1936 the defendant, a duly licensed physician, executed a certificate to the effect that he had on that day seen and examined the plaintiff and that he believed her to be insane; that defendant subsequently appeared in the county court and verified this certificate; that the plaintiff was accordingly declared insane and committed to the state hospital until December 17, when she was paroled to her husband; and that in August 1944, after a hearing in the probate court, she was officially pronounced sane. The plaintiff then alleged that during the entire time from September 1936 to August 1944 she was, in fact, sane; that defendant's certificate was false in that he did not on September 17, or at any time prior thereto, treat or examine the plaintiff for any mental disorder; and that, as a direct result of the defendant's acts, plaintiff was deprived of her liberty and rights as a citizen and has suffered, and will suffer, great pain of body and anguish of mind.

The Missouri statute of limitations provides that causes of action for malpractice (which plaintiff's counsel contend the petition sets forth) must be commenced within two years after the malpractice complained of (Mo. R. S. A., section 1016) unless the petitioner was then under a disability, in which case suit must be commenced within two years after the disability is removed (Mo. R. S. A., section 1020). Defendant contended the action was barred because it was not commenced within two years of the alleged malpractice. The plaintiff, however, argued that she, although sane, was under a disability within the meaning of section 1020 by reason of her commitment and confinement brought about by defendant's certificate, and that the two year period did not commence to run until the removal of that disability, namely the adjudication of plaintiff's sanity on Aug. 28, 1944.

It must be plainly seen, said the Supreme Court, that the plaintiff, in order to state a cause of action against the defendant, has pleaded, and would have to prove, her sanity at the time she was committed as the result of defendant's certificate. Since her action was instituted more than two years after the date of defendant's certificate, she has the burden of showing that she was under a disability within the meaning of the statute. To do so, she alleges she was insane at the time the defendant executed his certificate. The plaintiff's allegation of her sanity at the time her cause of action accrued, continued the court, surely negatives her allegation of insanity which she would have to prove in order to justify the delay in filing her action. The plaintiff urges, however, that if a physician assumes to sign a statutory certificate of another's insanity and does so untruly, without making, or without the exercise of due care in making, an examination or inquiry, then, if damage ensues, such physician should be held liable for the injury. In effect, therefore, the plaintiff argues that "insane" means not only persons actually insane but also persons actually sane but wrongfully committed as insane. At first glance, in such a case, it would seem that a court should be liberal in construing an "excepting section" in order to permit such a plaintiff's recovery, if a consequent commitment and confinement as an insane person had the practical effect of keeping the sane person from a timely commencement of his action. The court said, however, that statutes of limitations are not to be evaded except by the methods provided therein. The exceptions contained therein are strictly construed and are not enlarged by the courts on considerations of apparent hardship. The legislature of Missouri, concluded the court, did not broaden the language of the excepting section to include a sane person who, notwithstanding, is in fact disabled because wrongfully committed and confined as insane, from bringing an action; and so to broaden the section by construction would deny the effect of the plain meaning of the word "insane." The court accordingly concluded that the plaintiff's cause of action was barred by the statute of limitation, and the order of dismissal in favor of the defendant physician was affirmed.—*Woodruff v. Shores, 190 S. W. (2d) 994 (Mo., 1945).*

Malpractice: Insufficiency of Evidence to Show Malpractice in Gallbladder Operation.—The plaintiff sued for damages alleged to have resulted from the malpractice of the defendant physician. At the close of all the evidence the trial court directed a verdict in favor of the physician. Later, on motion of the plaintiff, the court entered an order granting a new trial and from such order the physician appealed to the Supreme Court of Washington.

The plaintiff's evidence showed that he had consulted the defendant physician in 1943 complaining of heartburn. After examination an operation to remove the appendix and gallbladder was advised and later performed on March 9, 1943. He went home from the hospital March 30 and from then until July the wound discharged bile and the plaintiff suffered from fevers and chills and at times coughed and vomited blood and bile. In May a piece of gauze was pulled from the wound by the plaintiff's mother. During July the defendant opened the wound on several occasions. In August defendant performed a second operation, requiring seventeen days' hospitalization, and after staying home for a while plaintiff returned to the hospital a third time. In December the plaintiff underwent an operation at the Mayo Clinic by Dr. Counseller. Returning to his home in January, he was treated by Dr. Willis and Dr. Bannick. During the next six months or so he made three more trips to Mayo's, and underwent another operation and a duodenal drainage. Between trips to the hospitals and to the different physicians, the plaintiff's wound would heal and he would suffer from fever, chills and jaundice; when the wound was opened or would break open, however, the resulting drainage would give the plaintiff some relief. The drainage ceased after the plaintiff's first trip to Mayo's but he continued to suffer from fever, chills and jaundice for a considerable time.

The defendant physician testified that the plaintiff first consulted him relative to a stomach trouble that had been present since plaintiff was a child. After making a complete physical, laboratory and x-ray examination, the physician concluded that the plaintiff's gallbladder and appendix were diseased and recommended their removal. The remainder of his testimony consisted, for the most part, of a most minute description of the actual performance of the operation of March 9. Asked if, in cutting the cystic duct, he had come close to the common hepatic duct, the defendant answered "On the contrary, I knew I had not come close to it." The doctor said the flow of bile might be due to disease or to a stricture in the remaining duct, or it might come from an accessory duct. Speaking of accessory ducts, he said that "they are not always there, but they are sufficiently frequent so that they are always in the mind of the operator and is an added reason to the ones that I have given before for putting drainage into the abdominal cavity after the removal of the gallbladder." At the hospital the plaintiff was given medicine to relieve his pain and to assist his recovery and was subjected to numerous tests to ascertain his condition. At one time the defendant had run a steel probe into the wound and bile had come out. The fact that bile was coming out through the wound indicated, in defendant's opinion, that the bile was being blocked. After his return home the defendant visited him on twenty-five occasions and on many of these visits he dressed the wound. Concerning the gauze that was pulled from the wound, the defendant testified that, in accordance with his usual procedure, a piece of gauze, mixed with iodine, or a sulfonamide compound, had been laid in the wound to assist drainage and had been changed every second or third day. It was one of those pieces that had been found by the plaintiff's family. He added, however, that gauze placed in a wound such as the plaintiff had would become infected and would smell bad, but that such condition was neither unusual nor unexpected. In August the defendant performed an exploratory laparotomy which revealed dense adhesions between the hepatic flexure and the abdominal wall. These were broken down as far as possible and "large masses" of them removed. They were caused, the defendant stated, by infected bile. He also found evidence of cirrhosis of the liver, likewise attributed to the infection.

Dr. Counseller, head of the section of general surgery at the Mayo Hospital, testified that he examined the plaintiff on December 3 and diagnosed a biliary fistula, which he said meant the drainage of the bile from an abdominal sinus or other opening or hole. During the operation which Dr. Counseller subsequently performed he found an attachment of the colon to the abdominal wall, with an opening in the colon. Asked how the hole was caused, Dr. Counseller said "That would be pretty hard for me to say. You could get a hole in the intestine from being next to an abscess and sloughing taking place, or you could get a hole in the bowel from a drainage tube that you might have in there—that is not uncommon, due to the pressure and that sort of thing." On cross examination he stated that a large amount of infection, inflammatory changes and adhesions made identification of the common hepatic duct very difficult and that he could not say that plaintiff's was not in existence. Given the history of the plaintiff's condition before and at the time of the first operation, Dr. Counseller said that while he did not pretend to be an authority on what constitutes ordinary care and customary competence in the region of Seattle, Washington, where the defendent physician practiced, in his opinion immediate surgery was not indicated at that time. He admitted on cross examination however that there could be an honest difference of opinion between competent medical men as to whether or not it would be advisable to operate on March 9 and that a physician could not be considered negligent for deciding either way.

Dr. Jacobson, who examined the plaintiff on March 17, about eight days after the first operation, testified that in his opinion the quick elevation of the temperature after the operation indicated that the bile had been infected before the operation. Asked if it was proper to allow the patient to go home a short time after the operation, Dr. Jacobson replied "Oh, yes. We let the patients go home; might as well drain at home as in the hospital. . . ."

Dr. Mosiman, who had practiced in Seattle since the first world war, was read a long hypothetical question which included a full description of the plaintiff's physical condition prior to the operation, as indicated by the plaintiff's history and the examination made by the defendant. He was then asked whether or not skilled physicians using ordinary care in this vicinity would be justified in operating for gallbladder and appendix trouble. He answered "Yes, decidedly." He also testified that a patient could have infected bile even before an operation.

Dr. Dudley, in answer to the same hypothetical question, stated "I would say these are symptoms of infection of the gallbladder which would justify an operation." He was also of the opinion that the plaintiff's condition after the operation was caused by an infection and that it was proper to allow the plaintiff to leave the hospital after his first operation.

Dr. Krantz stated that placing gauze in an infected wound and keeping the wound open and draining, to let the material out, are sound surgical measures. He was then asked if, under the condition where the surgical wound remained open, it is customary, in a surgical operation, for the surgeon to make a tract into the surgical wound through which the bile might come from some place on the inside and he answered "It would only be good surgical judgment to open the wound to allow this matter of bile to come forth."

Here we have, said the Supreme Court, a most interesting case, involving a charge of malpractice in the performance of a most difficult operation by a surgeon of many years' experience. The defendant concedes in his brief that if he cut, strictured, bruised or otherwise injured the common bile duct in either operation he would be guilty of negligence. We are unable to find any evidence which indicates that defendant in any way injured the common bile duct. Continuing, the court pointed out that the defendant in his testimony clearly and with minute detail described every step of the operation. He distinctly stated that he had not injured the common duct. His method of operation and treatment was approved by eminent physicians and surgeons, including those called by the plaintiff. It is entirely clear, said the court, that the intense pain suffered by the plaintiff was caused by the disease which necessitated the operation. Before the operation plaintiff was a sick man. He had been suffering from a disease condition of the gallbladder, brought about by infected bile. The bile remained infected after the operation. It irritated the wound and the ducts and caused the many adhesions, which in turn brought about the unsatisfactory condition which caused the plaintiff to believe that the operation had not been properly performed. There was no foreign substance left in the plaintiff's abdomen by the defendant. There was no foreign substance left in or near the wound except the gauze and other necessary dressings. Plaintiff's own witness, Dr. Bannick, was of the opinion that placing gauze in the wound and keeping the wound open and draining were sound surgical measures. In conclusion, the Supreme Court said that the great mass of evidence supplied in this case did not prove negligence on the part of the defendant. It did, on the other hand, prove that the defendant used great care in performing the operation and administering to his patient's needs after the operation. Accordingly the order of the trial court granting a new trial was reversed with instructions to dismiss the action.—*Fritz v. Horsfall, 163 P. (2d) 148 (Wash., 1945).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS
EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the Examining Board in Specialties were published in The Journal, March 30, page 896.

BOARDS OF MEDICAL EXAMINERS

Arkansas:* *Medical.* Little Rock, June 6-7. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, June 6. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

Delaware: *Examination.* Dover, April 9. *Reciprocity.* Dover, April 16. Sec., Medical Council of Delaware, Dr. J. S. McDaniel, 229 S. State St., Dover.

Florida:* Jacksonville, June 24-25. Sec., Dr. Harold D. Van Schaik, *2736* S.W. Seventh Ave., Miami 36.

Hawaii: Honolulu, July 8-11. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

Idaho: Boise, July 9. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.

Indiana: Indianapolis, April 25-27. Sec., Board of Medical Registration & Examination, Dr. W. C. Moore, 301 State House, Indianapolis 4.

Maryland: *Homeopathic.* Baltimore, June 18-19. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore.

Minnesota:* April 16. Sec., Dr. J. F. Du Bois, 230 Lowry Medical Arts Bldg., St. Paul 2.

Mississippi: June. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson 113.

Nevada: Carson City, May 6. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

New Jersey: Trenton, June 18-19. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New Mexico:* Santa Fe, April 8-9. Sec., Dr. LeGrand Ward, 141 Palace Ave., Santa Fe.

New York: Albany, Buffalo, New York and Syracuse, June 24-27. Sec., Dr. Jacob L. Lochner, Education Bldg., Albany.

North Dakota: Grand Forks, July 2-5. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

Oregon:* *Endorsement.* Portland, April 27. *Examination.* Portland, July 24-26. Exec. Sec., Miss Lorienne M. Conlee, 608 Failing Bldg., Portland 4.

Pennsylvania: Philadelphia and Pittsburgh, April. Act. Sec., Bureau of Professional Licensing, Department of Public Instruction, Mrs. M. G. Steiner, 351 Education Building, Harrisburg.

South Carolina: Columbia, June 24-26. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

South Dakota:* Pierre, July 16-17. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

Washington:* Seattle, July 11-12. Sec., Department of Licenses, Miss Nell Adams, Olympia.

Wisconsin:* June 25-27. Sec., Dr. C. A. Dawson, River Falls.

Wyoming: Cheyenne, June 3-4. Sec., Dr. G. M. Anderson, Cheyenne.

* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Arkansas: Little Rock, May 1. Sec., Mr. L. E. Gebauer, 701 Main St., Little Rock.

District of Columbia: Washington, April 22-23. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

Florida: Gainesville, June 4. Final date for filing application is May 20. Sec. Dr. J. F. Conn, John B. Stetson University, DeLand.

Iowa: Des Moines, April 9. Dir., Division of Licensure & Registration, Mr. H. W. Grefe, Capitol Bldg., Des Moines 19.

Michigan: Ann Arbor and Detroit, May 10-11. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

Nebraska: Omaha, May 7-8. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Ophthalmology, Cincinnati

29:1-150 (Jan.) 1946

Persistence and Hyperplasia of Primary Vitreous: Tunica Vasculosa Lentis or Retrolental Fibroplasia. A. B. Reese and F. Payne.—p. 1.
Graduate Training in Ophthalmology: Second Jackson Memorial Lecture. H. S. Gradle.—p. 24.
*Report from the Wilmer Institute on Results Obtained in Treatment of Myopia by Visual Training. A. C. Woods.—p. 28.
Eye Conditions Among Children of Premature, Full Term and Hypermature Birth. T. H. Eames.—p. 57.
Vision in Industry. I. B. Lueck.—p. 63.
Visual Test for Infants. J. N. Evans.—p. 73.
Repeatability of Keratometric Readings. R. E. Bannon and Rita Walsh. —p. 76.

Treatment of Myopia by Visual Training.—A series of 103 myopic persons were selected from a total of 130 applicants. The uncorrected visual acuity of these patients was recorded, a cycloplegic was instilled and the retinoscopic and static refractions were determined. At the end of the visual training the patients were again examined. It was found that 30 of these patients showed a low grade improvement on all charts. This improvement averaged an increase of 27 points in the percentage visual acuity. A second group of 31 patients did not show a consistent improvement on all four charts but did show an overall improvement in both eyes which averaged 14.7 points increase in the percentage visual acuity. The improvement in these two groups was not consistently maintained. A third group of 32 patients did not show any change in the percentage visual acuity. A fourth group of 10 patients showed a decrease in the percentage visual acuity of 10.8 points. The changes in the percentage visual acuity noted was found to lie within the limits of error of subjective testing. It was believed by the examiners that education in the correct interpretation of a blurred visual image was the chief factor in the improvement noted in this group. It was further believed that the exercises produced a beneficial psychologic reaction in certain patients toward their visual handicap. The visual training used on these patients was not of value in the treatment of myopia.

Am. J. Roentgenol. & Rad. Therapy, Springfield, Ill.

54:541-768 (Dec.) 1945

Chronology of Röntgen's Life. O. Glasser.—p. 541.
Scientific Forefathers of Röntgen. O. Glasser.—p. 545.
Postwar Visit to Röntgen's Laboratory. L. E. Etter.—p. 547.
Protection Against High Energy Roentgen Rays: Caldwell Lecture, 1945. G. Failla.—p. 553.
Experiences with Roentgen Ray Tube. W. D. Coolidge.—p. 583.
Early American Roentgenograms. O. Glasser.—p. 590.
Roentgen Examination in Occupational Diseases of Lungs: Historical Discussion of Its Use. E. P. Pendergrass.—p. 595.
Fifty Years of Roentgen Rays in Gastroenterology. J. T. Case.—p. 607.
Roentgen Diagnosis in Urologic Disorders. B. H. Nichols.—p. 626.
Background and Beginning of Cholecystography. B. R. Kirklin.—p. 637.
Development of M[illegible] Neuroroentgenology. L. M. Davidoff.—p. 640.
Early History of [illegible] R. Spillman.—p. 643.
History of Roentg[illegible]t. H. Roesler.—p. 647.
History of Use of Roentgen Ray in Warfare: Caldwell-Carman Lecture, 1944. L. Reynolds.—p. 649.
Army Roentgen Ray Equipment Problem. A. A. de Lorimier and M. Dauer.—p. 673.
History of Dosimetry in Roentgen Therapy. E. H. Quimby.—p. 688.
Utilization of Antibody for Localization of Metals and Dyes in Tissues: Preliminary Report. L. A. McClintock and M. M. Friedman.—p. 704.
Salient Factors in Treatment of Hodgkin's Disease and Lymphosarcoma with Roentgen Rays. A. U. Desjardins.—p. 707.
Biologic Evaluation of 20 Million Volt Roentgen Rays: Acute Roentgen Death in Mice. H. Quastler and R. K. Clark.—p. 723.
Hookworm Disease: Small Intestinal Study. P. J. Hodes and G. P. Keefer.—p. 728.

American Journal of Surgery, New York

71:1-166 (Jan.) 1946

Physick-Sellheim Principle of Extraperitoneal Cesarean Section: Elucidation of Technic Based on 175 Cases. J. V. Ricci and J. P. Marr. —p. 3.
Saddle Block Anesthesia. J. Adriani and D. Roman-Vega.—p. 12.
Chronic Lumbar Backache. C. A. Splithoff.—p. 19.
Causes of Death in Burned Patients: Report of 23 Deaths in 744 Burned Patients. A. G. Bettman.—p. 26.
Contiguous Skin Flaps for Wounds of Extremities. L. R. Rubin.—p. 36.
*Studies on Neuromuscular Dysfunction: Neostigmine Therapy of Chronic Disability Following Fractures: Report of 51 Cases. H. Kabat and C. W. Jones.—p. 55.
Diabetic Amputations: Amputation of Lower Extremity in Diabetics—Analysis of 128 Cases. A. Mandelberg and W. Sheinfeld.—p. 70.
Towel for Use in Thigh Amputations. R. H. Lawler.—p. 77.
Treatment of Finger Fractures, Simple and Compound: Finger Amputations. G. J. Curry.—p. 80.

Neostigmine Therapy of Disability Following Fractures.—Kabat and Jones report on neostigmine therapy of 51 patients for neuromuscular dysfunction resulting from trauma. Twenty-three of the 51 patients had fractures of the upper extremity, 17 had fractures of the lower extremity, 7 had fractures of the vertebrae and 4 had multiple fractures. Excluding the disabilities which had been present longer than five years, the average duration of the disability was 11.2 months. Of 20 patients who were given daily injections of saline solution for one week as a placebo, only 2 showed improvement. Neostigmine was usually administered for two to three weeks. This treatment resulted in significant improvement in 39 of the 51 patients. Of the remaining 12, 4 showed slight improvement while the other 8 were without improvement. It has been possible to follow 27 of the 39 patients who showed significant improvement from neostigmine therapy for one to eight months after treatment was discontinued. In all except 1 the improvement was retained after cessation of drug administration. The therapeutic value of neostigmine in the treatment of chronic disability following fractures emphasizes the important role of neuromuscular dysfunction in these disabilities.

American Journal of Tropical Medicine, Baltimore

25:447-540 (Nov.) 1945

*Effect of Cox Type Vaccine on Louse Borne Typhus Fever: Account of 61 Cases of Naturally Occurring Typhus Fever in Patients Who Had Previously Received One or More Injections of Cox Type Vaccine. R. S. Ecke and others.—p. 447.
Ineffectiveness of Intensive Mapharsen, Bismuth and Carbarsone as Curative Drugs for Chronic Malaria. S. Spector, J. W. Haviland and L. T. Coggeshall.—p. 463.
Pigmentation of Palate and Subungual Tissues Associated with Suppressive Quinacrine Hydrochloride Therapy. V. W. Lippard and G. L. Kauer Jr.—p. 469.
Complement Fixation in Relapsing Plasmodium Vivax Malaria. Anna D. Dulaney and R. B. Watson.—p. 473.
Scrub Typhus. J. S. Browning, M. Raphael, E. F. Klein and A. Coblenz. —p. 481.
Observations on Incidence of Wuchereria Bancrofti Larvae in Native Population of Solomon Islands Area. R. J. Schlosser.—p. 493.
Concentration Method for Demonstrating Microfilariae in Blood. J. S. Harris and W. A. Summers.—p. 497.
Portuguese Man of War Stings: Case Report. H. J. Frachtman and W. T. McCollum.—p. 499.
Anopheles Punctimacula D. & K. as Vector of Malaria in Medellin, Colombia, South America. H. Rey, H. Soto and C. B. Huffaker. —p. 501.
Two Exogenous Cases of Visceral Leishmaniasis (Kala Azar) in United States, with Notes on Cultivation of Leishmania Donovani in Vitro. E. J. Munter ar[illegible] 507.
Report on Case of [illegible] and B. Kenamore.—p. 513.
Fresh Laboratory [illegible] Medical Parasitology. G. F. Otto.—p. 515.
Lepromin Skin Tests in Boeck's Sarcoid. K. D. Weeks and D. T. Smith.—p. 519.
Reaction to Lepromin of Patients with Sarcoid or Tuberculosis Compared with That of Patients in General Hospitals, with Discussion of Mechanism of Reaction. G. T. Harrell and S. F. Horne.—p. 523.

Effect of Cox Type Vaccine on Louse Borne Typhus.—Ecke and his associates report 61 cases of naturally occurring louse borne typhus in patients who had received, previous to the onset of illness, one or more injections of 1 cc. of ether extracted Cox type yolk sac vaccine equivalent in concentration to 10 per cent yolk sac suspensions of rickettsias of epidemic typhus. The patients who received two or more doses of vaccine twenty-one days or more before the onset of typhus had the mildest course and the shortest febrile period. The only fatality was of a patient who received one dose of vaccine only three days before the onset of illness The vaccine reduced the mortality as well as the severity of naturally acquired typhus as it occurs under conditions which prevail during epidemics The longest interval observed between the last dose of vaccine and the onset of typhus was 325 days Most of the intervals were less than 100 days It is possible that the administration of vaccine during the incubation period of typhus will lessen the severity of illness

American Review of Tuberculosis, New York

53:1-102 (Jan) 1946

"Speed of Reaction" Hypothesis II Further Numerical Implications Regarding Tuberculosis H W Hill—p 1
Electrocardiograms in Chronic Pulmonary Disease Theoretical Interpretation E Goldberger and S P Schwartz—p 34
Bronchiolar Spasm as Cause of Reexpansion of Lung Following Intrapleural Pneumonolysis O C Brantigan and R Hoffman—p 52
Respiratory Malformations Types, Causes and Significance Preliminary Report H Jordan—p 56
Effect of Purified Fractions of Tuberculin on Tuberculin Sensitive Tissue Quantitative Studies on Tissue Cultures Dorothy H Heilman and Florence B Seibert—p 71
Tuberculostatic Action of Sodium Salts of Certain Synthetic Alicyclic Acids E W Emmart—p 83

Annals of Internal Medicine, Lancaster, Pa.

23:915-1058 (Dec) 1945

Idiosyncratic Febrile Reactions to Thiouracil Clinical Characteristics and Possible Pharmacologic Significance Janet W McArthur, R W Rawson and J H Means—p 915
Meningococcic Infections, with Special Reference to Certain Diagnostic Considerations Analysis of 37 Cases A C Oxman and I Fischer—p 924
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Broncholithiasis Report of 10 Cases J R Fox and L H Clerf—p 955
Amebiasis Report of 39 Cases Observed in Army General Hospital Stationed in Northern Ireland J N Edson A P Ingegno and J B D'Albora—p 960
Hypersensitivity and Rheumatic Fever Part I J K Aikawa—p 969
Id Part II Relation of Rheumatic Fever to Hypersensitivity J K Aikawa—p 983

Annals of Otol., Rhin. and Laryngology, St. Louis

54:*649-846* (Dec) 1945

*Use of Radium in Aerotitis Control Program of Army Air Forces Combined Report by the Officers Participating J E Hendricks, D H Earl and others—p 649
Further Experiments in Production of Negative Pressure in Trachea and Frontal Sinus by Ciliary Action A C Hilding—p 725
"Postnasal Drip" Current American Nightmare A W Proetz—p 739
Nasal Psychosomatic Syndromes Accompanying and Following Acute Anxiety W L Post—p 747
Use of Tantalum in Radical Frontal Sinus Surgery R L Goodale p 757
Pneumosinus Dilatans H Brunner, I G Spiesman and T J Theobald—p 763
Treatment of Suppurative Paranasal Sinusitis with Repeated Irrigations of Penicillin Negative Report R E Priest—p 786
Photography Through Nasopharyngoscope J E Hendricks—p 797
Meniere's Syndrome Validity of Intradermal Histamine Test M Atkinson—p 801
Mixed Salivary Tumor in Right Tonsil Fossa with Narcolepsy and Cataplexy C E H Bates—p 812

Radium in Control of Aerotitis—This combined report is based on studies conducted on flying personnel in the European and Mediterranean theaters of operation by medical officers Aerotitis due to inability to ventilate the middle ear during flight has been a major cause of disability in flying personnel Treatment was based primarily on the elimination of hyperplastic lymphoid tissue in the nasopharynx, which is the most common cause of eustachian tube malfunction Irradiation of such tissue with radium was chosen as the best and most practical method of treatment to remove the mechanical factor which predisposes to aerotitis and to remove tissue that harbors pathogenic organisms which precipitate attacks of nasopharyngitis These infections not only increase the susceptibility of the flier to aerotitis but are responsible for much loss of flying time Of the 6 881 patients selected for treatment only 1,129 were available for observation The following conclusions were reached 1 The use of the nasopharyngeal radium applicator is a safe practical and effective method of irradiating hyperplastic lymphoid tissue in the nasopharynx 2 Irradiation of the nasopharynx causes a regression of lymphoid tissue and improves ability to ventilate the middle ear 3 Irradiation of hyperplastic lymphoid tissue about the eustachian tube orifice is an effective prophylactic measure for aerotitis in flying personnel 4 Radium therapy is an advance in the control of recurrent aerotitis

Archives of Ophthalmology, Chicago

34:357-486 (Nov -Dec) 1945

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Law of Physiologic Aging as Derived from Long Range Data on Refraction of Human Eye I Bernstein—p 378
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Foster Kennedy Syndrome with Post Traumatic Arachnoiditis of Optic Chiasm and Base of Frontal Lobes H E Yaskin and B J Alpers—p 399
Hypertensive Retinopathy Associated with Adrenal Medullary Tumor (Pheochromocytoma) New Clinical Entity F H Rodin—p 402
Changes of Labyrinthine Excitability in Lesions of Optic Tract or External Geniculate Body E A Spiegel and N P Scala—p 408
Ocular Varicella Report of Case of Corneal Phlyctenule H F Falls and J G Beall—p 411
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Congenital Bilateral Subluxation of Lens Report of a Family R R Chace—p 425
Complications Incident to Simple Intracapsular Extraction Some Procedures Designed Toward Prevention F Bracken—p 427
Blepharoptosis R N Berke—p 434

Archives of Otolaryngology, Chicago

42:309-452 (Nov -Dec) 1945

*Herpes Zoster Auris ("Geniculate" Ganglionitis) Report of 8 Cases, with Photographs of So Called Syndrome of Ramsay Hunt H O'Neill—p 309
Penicillin Therapy in Practice of Otolaryngology G C Struble—p 327
Histopathology of Incus and Head of Malleus in Cases of Stapedial Ankylosis J Lempert and Dorothy Wolff—p 339
Hyperplastic Sinopharyngostomatitis Manifestation of Borderline Allergy Resulting in Fetor ex Oris, Snoring and Globus Hystericus N Fox and R G Kesel—p 368
Prognosis of Recurrent Nerve Paralysis Following Thyroidectomy A I Laszlo and C O Fiertz—p 372
*Treatment of Chronic Suppurative Otitis Media with Penicillin J J Conley—p 374
Stripping of Vocal Cords J M Lore—p 378
Neglected Septal Cartilage Graft, with Experimental *Observations on* Growth of Human Cartilage Grafts L A Peer—p 384
Neoplasms of Both Maxillary Sinuses M D Berger—p 397
Atrophic Rhinitis and Ozena W M Fitzhugh Jr—p 404
Occupational Deafness with Special Reference to Chronic Occupational Deafness A Goldner—p 407
Nonvirulent Diphtheria G F Harkness—p 412
Tumors of Nose and Throat G B New and E L Foss—p 421
Tonsils and Adenoids J D Singleton—p 428

Herpes Zoster Auris ("Geniculate" Ganglionitis).—O'Neill believes that herpes zoster auris presents itself in several forms, some of which are primarily involvements of the trigeminal, of the second cervical and of the vagal ganglion That the geniculate ganglion, as any cranial sensory ganglion, may also be involved cannot be denied, but that such involvement constantly produces otalgia and aural herpes zoster, with or without facial paralysis, as Hunt has asserted, is not in accordance with clinical data To proclaim that all aural, circumaural and juxta-aural herpes lies in the domain of the geniculate ganglion is an unproved assertion Hunt recognized the possibility of involvement of cranial sensory ganglions other than the geniculate, but such involvement to him was always secondary and subsidiary to geniculate involvement In this connection the author mentions 1 of his cases in which an attack of severe neuritis in the second cervical dermatome was followed by aural zosteriform vesiculation, not in Hunt's original zone of the geniculate ganglion but in the expanded zone of the wandering sensory fibers of the seventh nerve In this case Hunt's explanation is totally unsatisfactory.

O'Neill thinks that until necropsy evidence substantiates more completely than it has Hunt's assumptions that the geniculate ganglion not only sensorily innervates Hunt's primary cone, the concha, the tragus, the antitragus and the auditory canal but also at times the postaural region, the nares and the palate, herpetic involvements of these alleged seventh nerve regressive areas should not be referred to as examples of "Hunt's syndrome." Aural herpes occurs not only in gasserian and cervical ganglionitis but probably also in vagal or glossopharyngeal ganglionitis. Again, otalgia may be a symptom of either cervical, fifth, seventh, ninth or tenth ganglionic infection, and the remaining member of the triad, facial paralysis, is a motor disorder of the seventh nerve, its presence neither proving nor disproving a seventh nerve sensory involvement.

Penicillin in Chronic Suppurative Otitis Media.—Thirty young soldiers, whose average age was 26 and whose chief complaints were draining ears, were treated by Conley with large doses of a sulfonamide followed by penicillin. Many previously had had courses of treatment with penicillin and sulfonamide compounds without improvement. Six presented a history of trauma from artillery concussion, with resultant perforation of the tympanic membrane and infection. The remainder had complications with acute infectious processes. The beta hemolytic type of streptococcus and the hemolytic type of Staphylococcus aureus were isolated in approximately 50 per cent of the cases. The plan was to treat the patients first with sulfadiazine and to follow with penicillin in those not responding. Twenty-eight patients were treated with penicillin. It was found that penicillin therapy was of little help for patients whose chronic suppurative otitis media had proved resistant to sulfonamide compounds. The response of chronic suppurative otitis media to systemic treatment with sulfadiazine followed by 1,000,000 units of penicillin was insignificant. The response of chronic suppurative otitis media to local penicillin therapy was good; 53 per cent of the ears were definitely improved. Granulation tissue and cholesteatoma are not affected by sulfadiazine or penicillin whether administered generally or locally. Emphasis should be placed on antritis and epitympanitis and an attempt made to diagnose these conditions. The best treatment for acute and chronic suppurative otitis media is to prevent their occurrence by the prophylactic use of one or both of the chemical or biologic therapeutic agents.

Archives of Surgery, Chicago

51:205-324 (Nov.-Dec.) 1945

Pancreatitis: Anatomic Study of Pancreatic and Extrahepatic Biliary Systems. W. F. Rienhoff Jr. and K. L. Pickrell.—p. 205.
Sludged Blood in Traumatic Shock: I. Microscopic Observations of Precipitation and Agglutination of Blood Flowing Through Vessels in Crushed Tissues. M. H. Knisely, T. S. Eliot and E. H. Bloch. —p. 220.
*New Treatment for Postoperative Pulmonary Collapse. E. H. Grandstaff.—p. 237.
*Electrolyte Changes and Chemotherapy in Experimental Burn and Traumatic Shock and Hemorrhage. S. M. Rosenthal and H. Tabor.—p. 244.
*Gelatin Sponge, A New Hemostatic Substance: Studies on Absorbability. H. P. Jenkins and J. S. Clarke.—p. 253.
Breast Cancer and "Paget's Disease of the Breast." C. J. Costello. —p. 262.
Skeletal Fixation of Mandibular Fractures: Report of 5 Cases with 9 Fractures. H. D. Burke, D. L. Murphy and W. A. McNichols. —p. 279.
Progress in Orthopedic Surgery for 1944: VI. Congenital Dislocation of Hip. A. B. Gill.—p. 283.
Id.: VII. Tuberculosis of Bones and Joints. A. De Forest Smith. —p. 285.
Id.: VIII. Chronic Arthritis. J. G. Kuhns.—p. 289.
Id.: IX. Infantile Paralysis. C. E. Irwin.—p. 295.
Id.: X. Poliomyelitis. J. A. Toomey.—p. 306.
Id.: XI. Poliomyelitis: Convalescent Treatment and Related Subjects. R. L. Bennett.—p. 310.
Id. XII. Neuromuscular Disorders Exclusive of Poliomyelitis. W. M. Phelps.—p. 315.

New Treatment for Postoperative Pulmonary Collapse.—If pulmonary atelectasis or collapse develops, the patient should be placed on the unaffected side in a moderate Trendelenburg position. He should be instructed to cough, with some one holding his abdomen. Striking the patient on the back over the affected lung while encouraging him to cough will often help to dislodge the mucous plug. A new treatment consisting in cocainizing the throat with 5 to 10 per cent cocaine solution has been used in a number of cases, with almost instant cure. The cocaine solution in a cotton ball held in a curved applicator is placed far back in the throat and into the pyriform sinuses as if in preparation for a bronchoscopy. This procedure apparently relaxes the musculature of the bronchial tree enough so that within a few minutes the patient will cough up a large plug of mucus. Use of a small amount of epinephrine in the same cotton pledget will help stimulate the cough reflex. During the next twenty-four hours or more, use of intermittent inhalation of oxygen and carbon dioxide is continued, to keep respirations deep and to attempt to reexpand all bronchioles. Chemotherapy with sulfathiazole or sulfadiazine is begun and continued for twenty-four hours or longer to prevent pneumonia in the congested and airless area. The patient is rolled from one side to another frequently and made to continue to cough and take deep breaths. Cocainization of the throat has cured pulmonary collapse and has avoided the necessity of bronchoscopy.

Electrolyte Changes and Chemotherapy in Experimental Burn and Traumatic Shock.—The sodium, potassium and fluid changes have been studied quantitatively in traumatic shock in mice. The magnitude of these alterations and the high susceptibility of shocked animals to experimentally produced increases of sodium, potassium and fluid changes suggest that their combined effects may be an important factor in the mortality from shock. A high percentage of animals will survive an otherwise fatal burn, trauma or hemorrhage if isotonic solutions or sodium salts in amounts equivalent to 10 to 15 per cent of body weight are administered by any route during the first twenty-four hours. It is believed that current methods of treating shock are inadequate in regard to the quantity of isotonic sodium solution employed.

Gelatin Sponge, A New Hemostatic Substance.—Jenkins and Clarke tried an experiment to determine the behavior of the gelatin sponge in the tissues of animals. It was used without thrombin. Dogs were operated on by aseptic surgical technic. After the abdomen had been opened, incisions were made in the liver, the kidneys and the spleen. The hemorrhage was controlled by packing the moistened gelatin sponge into the incision and holding it in place for about two minutes with ordinary moistened gauze. When the gauze was removed, the gelatin sponge was usually adherent in the incision and the bleeding stopped. Gelatin sponge was also implanted in the omentum and in the rectus muscle near the abdominal incision. The animals were killed at periods varying from two to fifty-six days after the implantation. The experiments demonstrated that gelatin sponge is a bland substance which is slowly absorbed in the tissues over a period of about five weeks. Gelatin sponge was used also in 15 clinical cases in incisions in the liver to obtain specimens for biopsy, on the under surface of the liver after cholecystectomy, on thyroid beds after thyroidectomy, on dermatome donor areas, in laparotomy wounds and on the surface of granulating wounds. Bleeding was controlled and there were no complications which might be attributed to the use of the gelatin sponge. It appears to be useful wherever fibrin foam or oxidized cellulose have been proved to be of value.

Bulletin of Johns Hopkins Hospital, Baltimore

77:411-460 (Dec.) 1945

Control of Experimental Pneumonia with Penicillin: I. Comparison of Inhalation and Injection Therapy. Catherin E. Wilson, Caroline W. Hammond, Anne F. Byrne and Eleanor A. Bliss.—p. 411.
*Sodium Caprylate: New and Effective Treatment for Dermatomycosis of Feet. E. L. Keeney, L. Ajello, Elsie Lankford and Lois Mary. —p. 422.
Bacteriostatic and Bactericidal Effects of Fatty Acid Salts on Bacteria in Broth Cultures. E. L. Keeney, Elsie Lankford and L. Ajello. —p. 437.
Observations on Incidence of Tinea Pedis in Group of Men Entering Military Life. L. Ajello, E. L. Keeney and E. N. Broyles.—p. 440.

Sodium Caprylate for Dermatomycosis of Feet.—Keeney and his associates found that 10 per cent sodium caprylate ointment in vitro completely inhibited the growth of Trichophyton mentagrophytes. It was significantly superior to propionate-propionic acid, 5 and 10 per cent undecylenate-undecylenic acid and one-half and full strength Whitfield's, 10 per cent ammoniated mercury, 5 per cent sulfathiazole and 0.5 per cent tyrothricin ointments. The clinical results obtained with 10 per cent sodium caprylate ointment in the treatment of dermatomycosis of the feet were significantly superior to results previously obtained and reported on by employing either propionate-propionic acid or undecylenate-undecylenic acid ointments. The authors have not observed irritation or sensitization from the daily and protracted use of 10 per cent sodium caprylate ointment. Ten per cent sodium caprylate ointment allays itching and does not sting or burn those areas of skin where the epithelium has been denuded.

Canadian Journal of Public Health, Toronto

37:1-42 (Jan.) 1946

Tuberculosis Control. G. C. Brink.—p. 1.
Tuberculin Testing. F. O. Wishart and L. A. Pequegnat.—p. 7.
Food and Agriculture Organization of United Nations. L. B. Pett.—p. 12.
Pasteurization in Province of Quebec, with Special Reference to Montreal. A. Groulx.—p. 17.
Observations on Calcium Content of Cow's Milk. E. M. Semmons and E. W. McHenry.—p. 22.
Composition of Commercial Ice Cream. E. A. Grant and W. C. Henry.—p. 26.

Canadian Medical Association Journal, Montreal

54:1-94 (Jan.) 1946

Observations on Treatment of Infantile Paralysis in Acute State. J. A. Toomey.—p. 1.
Bronchoscopy in Treatment of Pulmonary Atelectasis. R. A. Gordon.—p. 6.
Visual Signs in Diagnosis. S. W. Smith.—p. 10.
Results of Random Chest X Ray Survey of Healthy Troops in Canada. R. W. Boyd.—p. 16.
Forward Abdominal Surgery: Analysis of 230 Cases. R. B. Eaton.—p. 19.
*Treatment of Obesity by Appetite Depressing Drugs. Leonora Hawirko and P. H. Sprague.—p. 26.
Study of Causes of Blindness in Over 12,000 Cases in Canada. F. A. Aylesworth.—p. 30.
Anatomic Clinics. I. M. Thompson.—p. 33.
Some Features of Dalhousie University Anatomy Course. D. Mainland.—p. 36.
*Benzyl Benzoate and Wool Dermatitis. S. J. Shane.—p. 39.
Cor Pulmonale. F. A. Willius.—p. 42.
Metastatic Carcinoma of Choroid. K. B. Johnston.—p. 46.
Simple Method for Spinal Anesthesia in Anorectal Surgery. F. B. Bowman.—p. 48.
Evaluation of Roentgen Pelvimetry. T. G. Stoddart.—p. 50.

Appetite Depressing Drugs in Obesity.—Hawirko and Sprague treated 162 persons for obesity. All were subjected to a physical examination and in a large percentage the basal metabolic rate was determined. The food intake was controlled by prescribing a 1,100 calory diet. Fluid and salt restriction was also advised. Amphetamine (benzedrine) sulfate 5 mg. at 8 a. m. and at 10 a. m. was prescribed for 14 of the group. In order to overcome excitability and insomnia of 6 patients d-amphetamine was substituted. For the subsequent patients d-amphetamine instead of amphetamine was prescribed as the appetite depressing drug. The dose used was 2.5 mg. one hour before each meal. This depressed the appetite sufficiently to enable the patient to follow the diet closely. It also avoided the discouragement and irritability which usually accompany rigid adherence to prolonged use of a low calory diet. When the weight became stationary in spite of strict adherence to treatment the d-amphetamine was increased to 5 mg. before the heaviest meal and eventually to 5 mg. before each meal. The maximum dose used was 15 mg. daily. Most patients whose basal metabolic rate was 0 or lower were given 1 grain (0.06 Gm.) of thyroid daily. Multiple vitamin pills were prescribed for all patients. Eight of the more obese patients were given 2 cc. of salyrgan intravenously at intervals of four days to two weeks. The duration of treatment varied from two to twelve months. Of 162 patients treated only 72 persevered with the treatment for more than two months. The amount of weight lost varied in proportion to the number of pounds the patient was overweight. The average weight loss was 5½ pounds (2.5 Kg.) per month. Two patients were unable to tolerate the d-amphetamine. Salyrgan is a valuable adjunct in the treatment of obesity, especially when there is great water retention. Six failures were observed, that is, they reduced less than 20 per cent of the number of pounds they were overweight. D-amphetamine is a useful appetite depressant drug in the treatment of obesity. It is a dextrorotary optically active isomer of racemic amphetamine (benzedrine).

Benzyl Benzoate Dermatitis and Wool Dermatitis.—In the permanent form of wool dermatitis in the soldier there is usually a history of repeated attacks of skin disease; the lesion is usually a folliculitis involving hairy areas in contact with the uniform. If, after the eruption has cleared in the hospital, the patient is allowed to wear battle dress in the ward, recurrence is early and dramatic. If patch tests are performed, discrete areas of folliculitis are produced. A secondary dermatitis not infrequently occurred following the benzyl benzoate treatment for scabies. It was emphasized that this type of dermatitis cleared on avoidance of wool and persisted under any other form of therapy unless the wearing of wool was interdicted. It was also noted that the skin reaction did not occur if benzyl benzoate treatment was administered on only one occasion but that it tended to supervene if the treatment was repeated within two weeks. When such contact dermatitis appears it should be distinguished from relapse of scabies, and lotio scabei therapy should not be pursued. Repeated application of lotio scabei should be discouraged, as the transient wool sensitivity which results may persist for an indefinite time.

Cancer Research, Baltimore

6:1-48 (Jan.) 1946

Carcinogenicity of p Dimethylaminoazobenzene in Diets Containing Fatty Acids of Hydrogenated Coconut Oil or of Corn Oil. B. E. Kline, J. A. Miller, H. P. Rusch and C. A. Baumann.—p. 1.
Certain Effects of Dietary Fats on Production of Liver Tumors in Rats Fed p Dimethylaminoazobenzene. B. E. Kline, J. A. Miller, H. P. Rusch and C. A. Baumann.—p. 5.
Desoxyribonucleic Acid in Epidermal Carcinogenesis Induced by Methylcholanthrene. C. Carruthers and V. Suntzeff.—p. 8.
Observations on Experimentally Produced Sarcomas of Pigeons. J. B. Murphy and E. Sturm.—p. 11.
Effects of Ultraviolet Radiation on 3,4 Benzpyrene and Other Polycyclic Aromatic Hydrocarbons. Absorption Spectrums and Some Chemical Properties of Water Soluble Products. C. B. Allsopp and B. Szigeti.—p. 14.
Id.: Role of Benzene in Photoreactions in Solutions Containing It. C. B. Allsopp and B. Szigeti.—p. 22.
Id.: Carcinogenic Activity of Aqueous Extracts from Irradiated 3,4 Benzpyrene. C. B. Allsopp.—p. 24.

Cincinnati Journal of Medicine

27:1-72 (Jan.) 1946

Clinical and Pathologic Observation of Cases of Head Injury. J. P. Evans.—p. 1.

27:73-150 (Feb.) 1946

Problems of Neuroses: Experimental Approach. J. H. Masserman.—p. 73.
Hepatitis: Newer Developments. L. Schiff.—p. 97.
Penicillin in Treatment of Gonorrhea: Results with 675 Women. Ruth B. Thomas and Edda Meyer.—p. 108.

Diseases of Chest, Chicago

12:1-88 (Jan.-Feb.) 1946

Management of Pure Tuberculous and Mixed Infection Empyemata. G. G. Ornstein and M. Herman.—p. 1.
Chronic Pleural Empyema: Its Surgical Treatment. J. B. Grow.—p. 26.
Evaluation of Various Surgical Procedures in Treatment of Pulmonary Tuberculosis. R. C. Matson, W. S. Conklin and S. Domm.—p. 40.
Treatment of Tuberculous Empyema. K. P. Klassen, M. D. Miller and G. M. Curtis.—p. 51.
Treatment of Tuberculous Empyemas with Tyrothricin. J. M. Donaldson Jr. and H. C. Samuel.—p. 61.
Tuberculous Empyema Treated with Vitamin A D Concentrate: Preliminary Report. W. Raab.—p. 68.

Georgia Medical Association Journal, Atlanta

35:1-26 (Jan.) 1946

Prevention and Treatment of Pulmonary Embolism. J. G. Gay and W. H. Proctor.—p. 1.
Renal Ectopia. R. Bell.—p. 5.
Renal Decapsulation. E. Felber.—p. 7.
Use of Lanatoside C in Treatment of Congestive Heart Failure. E. Van Buren.—p. 9.
Treatment of Burns. L. H. Oden Jr.—p. 12.

Indiana State Medical Assn. Journal, Indianapolis

39:1-52 (Jan.) 1946

Indiana's Health Program. R. F. Gates.—p. 1.
Medicine in Postwar World. M. Fishbein.—p. 4.
Osteomyelitis: Treatment by Radical Saucerization and Early Skin Grafting. J. A. McClintock.—p. 9.
Relation Between Trauma and Malignant Disease. A. K. Harcourt and J. V. Reed.—p. 14.
Lung Abscess. P. D. Crimm.—p. 17.
Ménière's Syndrome. J. R. Lindsay.—p. 23.
Federal Income Tax and the Medical Profession. F. Shirley Wilcox. —p. 35.
Service to All of the People Is the Price of Medical Freedom. J. T. Oliphant.—p. 37.
Nursing Service Needs. Helen Teal.—p. 38.

Iowa State Medical Society Journal, Des Moines

36:1-38 (Jan.) 1946

Management of Patient with Colostomy. L. E. Moon.—p. 1.
Nitrate Levels in Water from Rural Iowa Wells: Preliminary Report. G. Johnson, Agnes Kurz, Josephine Cerny, Ann Anderson and G. Matlack.—p. 4.
Reduction Procedure for Cervical Spine Fractures: Preliminary Report. W. D. Abbot and E. M. George.—p. 7.

36:39-84 (Feb.) 1946

Results of Administration of Varying Doses of Sodium Bromide. C. H. Millikan and W. D. Paul.—p. 39.
Foot Deformities Corrected by Rubber Band Traction. R. E. Gunn. —p. 48.
Early Diagnosis and Treatment of Rheumatic Fever. J. L. Kestel. —p. 50.
Laënnec's Cirrhosis, with Patency of Umbilical Vein. J. E. Flynn. —p. 52.

Journal of Aviation Medicine, St. Paul

16:363-444 (Dec.) 1945

Carrier Organization and Operation. H. A. Smedal.—p. 364.
Pilots with Repeated "Pilot Inaptitude" Accidents. M. M. Kalez and R. C. Hovde.—p. 370.
Physiologic Study of Aviators During Combat Flying. R. E. Kirsch. —p. 376.
*Acute Otitic Barotrauma Resulting from Low Pressure Chamber Tests. C. B. Stewart, O. H. Warwick and G. L. Bateman.—p. 385.
Airsickness During Early Flying Training. A. Hemingway and E. L. Green.—p. 409.
Cardiovascular Changes in Motion Sickness. A. Hemingway.—p. 417.
Comparative Study of Effects of Exercise and Anoxia on Human Electrocardiogram. W. S. Baum, R. B. Malmo and R. F. Sievers.—p. 422.
Effects of Mild Anoxia on Neuromuscular Coordination in Skilled Investigators. H. T. Ricketts, W. R. Adams, A. S. Alving and others. —p. 429.

Acute Otitic Barotrauma Resulting from Low Pressure Chamber Tests.—Stewart and his associates, in training airmen in the use of protective equipment and of grading them for relative susceptibility to compression sickness, take them on low pressure "runs" to altitude pressures of from 25,000 to 35,000 feet. It was found that descent in the low pressure chamber at a rate of 1,000 to 2,000 feet per minute results in an erythema of the eardrum in approximately 50 per cent of personnel without any symptoms of otitic barotrauma. Even in cases in which only mild difficulty is experienced in equalizing pressure in the ears the drum usually shows a severe generalized hyperemia, and fluid is sometimes present in the middle ear. Permanent eustachian blockage is the cause of otitic barotrauma in only a small number of cases, but these men should be eliminated from aircrew training as early as possible. The incidence of difficulty in equalizing ear pressure on the first run was higher among 1,086 men suffering from an upper respiratory infection (16.5 per cent) than in 1,096 men without such infection (10.1 per cent). The occurrence of serious difficulty was only slightly higher in those with upper respiratory infections (4.1 per cent) as compared with those free from infection (3.0 per cent). Overemphasis on the dangers of a "head cold" has caused undue apprehension among airmen. There was a progressive decrease in the incidence of otitic barotrauma on four successive low pressure chamber runs, demonstrating the value of training, which is also substantiated by the fact that the incidence of otitic barotrauma was lowest in the aircrew with the most flying experience. Men who had difficulty in performing the Valsalva procedure successfully at ground level had a higher incidence of otitic barotrauma. Dental malocclusion may be a minor factor in increasing difficulty in equalizing ear pressure, but this difficulty can be overcome by training in the proper methods, especially by relaxing the muscles of the jaw and throat while carrying out the Valsalva procedure. Acute otitis media is rarely a complication of otitic barotrauma.

Journal of Bacteriology, Baltimore

50:491-612 (Nov.) 1945

New Species of Cephalosporium in Madura Foot (Cephalosporium Granulomatis). F. D. Weidman and A. M. Kligman.—p. 491.
Study of Diphtheroids Found in Infectious Bovine Pyelonephritis. E. S. Feenstra, F. Thorp Jr. and C. F. Clark.—p. 497.
Control of Contaminants in Penicillin Fermentations by Antiseptic Chemicals. S. G. Knight and W. C. Frazier.—p. 505.
Chemical Changes in Submerged Penicillin Fermentations. H. Koffler, R. L. Emerson, D. Perlman and R. H. Burris.—p. 517.
Effect of Certain Chemicals on Penicillin Production and Mold Metabolism in Shake Flask Fermentations. H. Koffler, S. G. Knight, R. L. Emerson and R. H. Burris.—p. 549.
Method for Rapid Preparation of Löffler's and Petroff's Media. A. R. Foster and C. Cohn.—p. 561.
Some Artifacts Encountered in Stained Preparations of Tubercle Bacilli: Much Granules and Beads. K. R. Porter and D. Yegian.—p. 563.
New Salmonella Type Isolated from Man. L. A. Barnes, W. B. Cherry and W. A. Myers.—p. 577.
Toxicity and Antibiotic Activity of Kojic Acid Produced by Aspergillus Luteo-Virescens. H. E. Morton, W. Kocholaty, R. Junowicz-Kocholaty and A. Kelner.—p. 579.
Identification of Neisseria Gonorrhoeae by Means of Bacterial Variation and Detection of Small Colony Forms in Clinical Material. H. E. Morton and Joan Shoemaker.—p. 585.
Amount of Carbon Dioxide Supplied for Primary Isolation of Neisseria Gonorrhoeae. H. E. Morton.—p. 589.
Revival of Organisms Presumably Killed by Phenol. L. H. Flett, R. C. Haring, A. F. Guiteras and Rebecca L. Shapiro.—p. 591.
Remarkable Fission Yeast, Schizosaccharomyces Versatilis Nov. Sp. L. J. Wickerham and E. Duprat.—p. 597.

Journal of Clinical Investigation, Boston

24:775-924 (Nov.) 1945. Partial Index

Epidemic of Acute Respiratory Disease Associated with Atypical Pneumonia. L. Breslow.—p. 775.
Effect of Alterations in Blood Volume on Anemia and Hypoproteinemia of Human Malaria. H. A. Feldman and F. D. Murphy.—p. 780.
Chemical, Clinical and Immunologic Studies on Products of Human Plasma Fractionation: XXIX. Serum Albumin as Diluent for Rh Typing Reagents. J. W. Cameron and L. K. Diamond.—p. 793.
*Id.: XXX. Use of Salt-Poor Concentrated Human Serum Albumin Solution in Treatment of Chronic Bright's Disease. G. W. Thorn, S. H. Armstrong Jr., V. D. Davenport, L. M. Woodruff and F. H. Tyler. —p. 802.
Toxic Factors in Experimental Traumatic Shock. I. T. Nathanson, A. L. Nutt, A. Pope, P. C. Zamecnik, J. C. Aub, A. M. Brues and S. S. Kety.—p. 829.
Some Observations on Effect of Injected Cytochrome C in Animals. S. Proger, D. Dekaneas and G. Schmidt.—p. 864.
Effect of Iodine on Thyroid Gland in Graves' Disease When Given in Conjunction with Thiouracil: Two-Action Theory of Iodine. R. W. Rawson, F. D. Moore, W. Peacock, J. H. Means, O. Cope and Charlotte B. Riddell.—p. 869.
*Circulation and Respiration During Episode of Chill and Fever in Man. M. D. Altschule, A. S. Freedberg and M. J. McManus.—p. 878.
Estimation of Hepatic Blood Flow in Man. S. E. Bradley, F. J. Ingelfinger, G. P. Bradley and J. J. Curry.—p. 890.
*Absorption and Excretion of Streptomycin in Human Chronic Typhoid Carriers. D. D. Rutstein, R. B. Stebbins, R. T. Cathcart and R. M. Harvey.—p. 898.

Salt-Poor Albumin in Nephrosis.—Thorn and his associates administered salt-poor concentrated human serum albumin intravenously for periods varying between one and thirty days at a dosage of 50 Gm. a day and a rate of 10 Gm. an hour to a group of 7 patients in several stages of chronic nephritis maintained on a diet adequate in calories, containing 80 to 125 Gm. of protein daily and low in sodium chloride. In patients with edema, low serum proteins and absent to moderate hypertension and nitrogen retention, albumin in this dosage was a safe agent in increasing the serum albumin level and in inducing positive nitrogen balance. The diuretic effect of salt-poor albumin was most striking in the severe nephrotic state with massive edema. Control studies with amino acid mixtures administered by mouth and intravenously and with mercupurin did not yield diuresis under these circumstances. The diureses following albumin proceeded at a constant rate only during the period of administration. Following short periods of therapy (ten days or less) the ability to maintain weight loss was roughly related to the slope and direction of the patient's weight curve on the basal regimen. In the 1 instance of prolonged (thirty day) therapy in nephrosis a previously rapidly ascending weight curve became flat following diuresis of 20 Kg., although the patient was still edematous. In contrast to its effect on nephrotic anasarca, the diuretic effect of salt-poor albumin in the presence of minimal edema was slight. Although control studies showed that both amino acid mixtures in comparable quantities and urea (20 Gm. daily) were likewise ineffective, massive doses of urea (90 Gm. a day), when tolerated, appeared to induce further diuresis and weight loss of a transient character. Albumin administration in the presence of severe hypertension or nitrogen retention and in the absence of edema appeared contraindicated owing to its efficacy in rapidly increasing blood volume beyond the tolerance of the cardiovascular system.

Circulation and Respiration During Fever.—Altschule and his co-workers studied changes in the respiratory and circulatory functions of 8 patients following the intravenous injection of typhoid vaccine. The febrile reaction consisted of 4 phases: (*a*) prodrome, (*b*) chill, (*c*) flush, (*d*) defervescence. Each had distinctive clinical features and, except for the prodrome, each was characterized by physiologic phenomena. The chill phase was characterized by intense vasoconstriction, decreased cardiac output, slowed circulation time, hyperventilation, alkalosis and oliguria. There was an initial hypertension followed by hypotension and, in some experiments, shock. The flush phase was characterized by severe vasodilatation, drenching sweats, increased cardiac output, accelerated circulation time, a lesser degree of hyperventilation, maintained alkalosis, diuresis and in many experiments a sudden fall in blood pressure at the onset of the phase. Defervescence was characterized by a return of all mechanisms toward normal. Lymphatic function was apparently increased in the flush phase. No change in circulating plasma volume occurred during the febrile reaction.

Streptomycin in Human Typhoid Carriers.—Rutstein and his associates selected chronic typhoid carriers as subjects for this study for several reasons: they were as relatively "normal" individuals as could be found in the population of the hospital and, in addition, provided an opportunity to study the effect of streptomycin on the typhoid carrier state. Streptomycin was administered every three hours in a dosage of 75,000 and 150,000 units intramuscularly and 31,250 units orally. Following intramuscular administration of streptomycin approximately 60 to 70 per cent of the drug was excreted in the urine during a twenty-four hour period. Appreciable amounts of the drug were not absorbed from the gastrointestinal tract following repeated administration of capsules containing 31,250 units. Blood concentrations of streptomycin following administration of 75,000 units intramuscularly every three hours ranged from 0 to 6 units per cubic centimeter and when the dose was increased to 15,000 units every three hours, the level rose from 5 to 20 units per cubic centimeter. Certain toxic manifestations were noted. At a dosage level of 75,000 to 150,000 units intramuscularly every three hours, significant bacteriostatic effect on the typhoid bacilli in the stool was not obtained. Following oral administration of 31,250 units every three hours, a definite transitory bacteriostatic effect on the typhoid bacilli in the stool was obtained in 2 of 3 patients.

Journal of Experimental Medicine, New York

82:375-476 (Dec.) 1945

Influence of Choline, Cystine and Alpha Tocopherol on Occurrence of Ceroid Pigment in Dietary Cirrhosis of Rats. J. Victor and A. M. Pappenheimer.—p. 375.
Biochemical, Biophysical and Immunogenic Properties of Japanese B Type Encephalitis Virus and Vaccines. C. E. Duffy and W. M. Stanley.—p. 385.
Plasma Protein Metabolism—Electrophoretic Studies: Influence of Plasma Lipids on Electrophoretic Patterns of Human and Dog Plasma. L. J. Zeldis, E. L. Alling, A. B. McCoord and J. P. Kulka.—p. 411.
Enduring Immunity Following Vaccination of Mice with Formalin Inactivated Virus of Russian Spring-Summer (Far Eastern, Tick Borne) Encephalitis: Correlation with Serum Neutralizing and Complement Fixing Antibodies. J. Casals and P. K. Olitsky.—p. 431.
Prevention of Pneumococcal Pneumonia by Immunization with Specific Capsular Polysaccharides. C. M. MacLeod, R. G. Hodges, M. Heidelberger and W. G. Bernhard.—p. 445.

Journal of International College of Surgeons, Chicago

8:502-583 (Nov.-Dec.) 1945

Variations in Blood Supply of Liver, Gallbladder, Stomach, Duodenum and Pancreas: Summary Based on One Hundred Dissections. N. A. Michels.—p. 502.
Bone Plastic Reamputation. N. N. Blokhin.—p. 505.
Bone Plastic Reamputation of Thigh. A. Kotov.—p. 509.
New Method of Articulation of Femur for Difficult Cases After Fracture of Neck of Femur. J. W. S. Esser.—p. 512.
Pilonidal Dimple, Sinus, Cyst and Abscess. A. J. Cantor.—p. 514.
Principles of Skin Grafting. R. H. Ivy.—p. 520.
Hernia into the Duodenojejunal Fossa (Hernia of Treitz): Report of 3 Cases. M. J. Biermann.—p. 525.
Diabetic Gangrene Involving the Sinuses. B. R. Dysart.—p. 529.
Uncomplicated Cecitis: Report of Case. C. J. DePrizio.—p. 534.
Relation of Gastric Acidity to Recurrent Ulcers After Partial Gastrectomy. A. Winkelstein.—p. 539.
Surgery of Common Bile Duct. M. Behrend.—p. 544.
Melanoblastoma with Systemic Metastatic Dermophilotropism. M. A. Manzanilla.—p. 562.
Melanoblastomas: Consideration of 13 Melanotic Neoplasms. C. Zuckermann.—p. 572.

Journal of the Mount Sinai Hospital, New York

12:905-960 (Nov.-Dec.) 1945

Role of Castration as Auxiliary Treatment in Carcinoma of Breast: Report of Case. B. S. Wolf.—p. 907.
Role of Infection in Thyroid Crisis. E. S. Cohen.—p. 917.
Hitherto Undescribed Anomaly of Extrahepatic Bile Ducts and Blood Vessels and Its Surgical Implications. S. J. Sarnoff.—p. 921.
Case of Chronic Metastatic Abscess of Costal Cartilage Due to Bacillus Pyocyaneus. D. Burdick.—p. 925.
Essays on Biology of Disease: Recent Advances in Psychosomatic Medicine. E. Moschcowitz.—p. 928.
Life's Later Years: Studies in Medical History of Old Age. F. D. Zeman.—p. 939.

Nebraska State Medical Journal, Lincoln

31:1-40 (Jan.) 1946

Conditions Which May Be Confused with Anginal Syndrome. F. W. Niehaus.—p. 5.
Mediastinal Cysts. E. A. Connolly.—p. 8.
Treatment of Major Burns in Naval Warfare. C. W. McLaughlin Jr.—p. 11.

New England Journal of Medicine, Boston

234:1-36 (Jan. 3) 1946

*Putrid Empyema. J. W. Strieder and J. P. Lynch.—p. 1.
*Early Diagnosis of Minimal Pulmonary Tuberculosis. I. D. Bobrowitz and R. E. Dwork.—p. 10.
Pentothal Sodium Anesthesia in Neurologic Surgery. E. W. Shannon and W. J. Gardner.—p. 15.
Agranulocytosis Following Mapharsen Therapy: Report of 2 Cases Treated with Penicillin. J. F. McManus.—p. 17.
Some Clinical Aspects of Social Medicine. I. M. Cannon.—p. 20.
Normal Laboratory Values.—p. 24.
Papillary Adenocarcinoma of Head of Pancreas, with Metastases to Common Bile Duct and Lung.—p. 28.

Putrid Empyema.—Strieder and Lynch found that among the 530 patients with acute empyema treated at Boston City Hospital in seven and a half years there were 90, or 17 per cent, with putrid empyema. The average incidence, however, appears to be from 5 to 10 per cent. Putrid empyema is usually secondary to some type of anaerobic infection of the lung. Most frequently it complicates a lung abscess or a gangrenous (fusospirochetal) pneumonitis, but bronchiectasis and tuberculosis are also listed among the primary diseases. Putrid empyema differs from postpneumonic or other pyogenic empyemas not only in etiology but also in bacteriology, pathology and clinical aspects. Clinically it is characterized when untreated by an acute onset with a rapid severe course and early fatal termination. In many patients the fluid is thin for some time. This characteristic should not be considered a criterion in treatment, for it is frequently noted that stabilization of the mediastinum occurs early in these patients. If the mediasinum is not stabilized, patients can receive the benefits of early and open operation. A review of the 90 cases reported demonstrates the value of early open operation. Zinc peroxide is of distinct value in postoperative treatment. Once the foul odor has disappeared and the hazard of open pneumothorax is in abeyance, these patients may be treated like those with the ordinary pyogenic empyema.

Minimal Pulmonary Tuberculosis.—To determine the factors that could aid an early diagnosis of tuberculosis, studies were made on 200 patients who were admitted to the sanatorium with lesions that were minimal according to the standards of the National Tuberculosis Association. Tuberculosis should be suspected at any age, in any occupation and with any type of social or economic background. Positive contact is not a clear diagnostic indication and was present in only 34 per cent of the patients. Close observation is, however, necessary for contact cases, since the incidence of tuberculous infection among them is high. Eighty-two per cent of patients with minimal tuberculosis had symptoms. This is contrary to the statement that minimal tuberculosis is asymptomatic. Minimal tuberculosis can simulate many other ordinary illnesses. Physical findings are totally unreliable in diagnosis. Only 29 per cent of the patients in this series had rales. Tubercle bacilli were found in 21 per cent of the cases. Concentrates and cultures—and ideally guinea pig inoculation—of sputum and fasting gastric contents are required for an adequate search for tubercle bacilli. The tuberculin test was little used in the diagnosis of these cases. X-ray examination was used for diagnosis in 94 per cent of the cases before admission. This is the only reliable method for early diagnosis of minimal tuberculosis. Films should be taken in every case with symptoms suggestive of tuberculosis, in any illness that may be tuberculosis and periodically in all contact cases. Routine x-ray examinations are required for the entire population.

New Orleans Medical and Surgical Journal

98:307-350 (Jan.) 1946

Carcinoma of Cervix: Attempted Follow-Up Study of 500 Cases: I. Analysis of Material. P. Graffagnino and Elizabeth M. McFetridge. —p. 307.
*Treatment of Carcinoma of Cervix at Charity Hospital: II. Analysis of 716 Cases; Three Year and Five Year End Results. M. Garcia and J. V. Schlosser.—p. 314.
Some Hazards of Anesthesia. J. Adriani.—p. 324.
Tuberculosis Survey in New Orleans. C. A. Stewart.—p. 330.
Report on Terminal Obstetric Anesthesia Using Low Spinal Block. A. L. Culpepper.—p. 335.

Treatment of Carcinoma of Cervix.—The study by Garcia and Schlosser is based on 716 unselected cases of carcinoma of the cervix admitted to the Charity Hospital of Louisiana at New Orleans in the four year period that ended March 31, 1942. The absolute three year survival rate for the entire group is 37 per cent. The absolute five year survival rate in a group of 329 cases seen through March 1940 is 28 per cent. X-ray therapy is an essential part of the treatment. Unless particularly favorable circumstances prevail, radium can be expected to control the disease only in the central zone of the pelvis. The two sources of radiation are mutually complementary, and they must be carefully integrated. X-ray therapy is administered first and is calculated to deliver a dose of 3,000 roentgens ± 15 per cent to the lateral edge of the parametria in a period of three weeks. This is followed in a few days by radium therapy, 6,600 roentgens being given to the paracervical region in five days, which requires an exposure of 6,500 to 8,500 milligram hours. The total duration of treatment is thirty to thirty-one days. The three dimensional distribution of the combined irradiation encompasses the main areas of involvement in a dosage range high enough to anticipate control of the disease in a substantial proportion of the cases. The authors conclude that radiation therapy remains the treatment of choice in carcinoma of the cervix in all stages of the disease.

Ohio State Medical Journal, Columbus

42:1-112 (Jan.) 1946

Increased Intracranial Pressure and General Practitioner's Responsibility. J. P. Evans.—p. 25.
Tantalum Cranioplasty. J. T. Bakody.—p. 29.
Progress and Stasis in Medicine: Perforation of Colon by Chicken Bone. W. M. Johnston.—p. 34.
Congenital Right Diaphragmatic Hernia with Autopsy Findings: Case Report. F. W. McDowell and J. M. Tondra.—p. 36.
Case of Perforative Diverticulitis of Colon in 27 Year Old Male. O. Eitzen.—p. 38.
Soil in Relation to Health. C. R. Orton.—p. 40.
Addison's Disease: Report of Case and Analysis of Autopsied Cases of Tuberculosis of Adrenal Glands. R. P. Hardwig and C. H. Wright. —p. 45.

Pennsylvania Medical Journal, Harrisburg

49:385-496 (Jan.) 1946

Penicillin in Obstetrics: Final Report. H. A. Power and C. A. Cravotta. —p. 401.
*Oral Penicillin. P. György, Katharine W. Evans, Elizabeth K. Rose, Josephine G. Perlingiero and W. F. Elias.—p. 409.
Induced Sensitivity from Topical Use of Sulfonamides and Penicillin. P. E. Bechet.—p. 417.
Convulsions in Infancy and Childhood. A. Capper.—p. 421.

Oral Penicillin.—György and his associates compared the blood levels of penicillin in children after ingestion of aqueous penicillin solution and of buffered penicillin (mixed with sodium citrate). Less irregular, higher and more prolonged blood levels were the rule after administration of buffered penicillin by mouth. In the search for other buffers aluminum hydrate gel was considered as a possible substitute for sodium citrate. The blood levels obtained were higher after ingestion of buffered penicillin than after the ingestion of capsules containing the penicillin-oil-beeswax mixture. Trisodium citrate seemed superior to aluminum hydrate gel. The blood levels obtained after the use of 15,000 units of penicillin given intramuscularly do not differ materially from those observed following the use of 40,000 units of penicillin buffered with trisodium citrate administered by mouth. Given in doses which were approximately three times higher than the customary parenteral doses, penicillin by mouth proved to be therapeutically effective in pneumonia, in upper respiratory infections and their complications, in gonorrhea and in pyogenic cutaneous infections. It appears inadvisable to supplant parenteral with oral penicillin indiscriminately. Parenteral administration still remains the method of choice, at least during the early acute phase, in very sick patients with septicemia or meningitis.

United States Naval Med. Bulletin, Washington, D. C.

46:1-168 (Jan.) 1946

Leukemia in Naval Personnel. B. L. Canaga Jr., D. A. Wood, L. H. Dyke Jr. and A. M. Snell.—p. 1.
Early Recognition and Treatment of Vascular Injuries. H. K. Gray, C. D. Benson, A. M. McDonald and H. D. Adams.—p. 14.
Symposium on Military Medicine Aboard U. S. S. Samaritan.
  A. Early Treatment of Orthopedic Casualties on Hospital Ship. E. L. Jewett, J. F. Belair, H. Lohnaas and J. N. Hamm.—p. 25.
  B. Covering Guillotined Stump. E. L. Jewett.—p. 37.
  C. Anesthesia on Hospital Ship. R. W. Enos.—p. 40.
  D. Medical Problems of Internist on Hospital Ship. W. P. Reed and H. B. Sweetser Jr.—p. 43.
  E. Perforating Wounds of Kidney. E. M. Cannon.—p. 49.
  F. Punctate Cerebral Hemorrhage Following Thoracic Trauma. H. Wood and H. B. Sweetser Jr.—p. 51.
  G. Injuries of Face and Neck in War Casualties. H. J. Wiser and M. F. McAfee.—p. 57.
  H. Eye Injuries in War Casualties Aboard Hospital Ship. H. J. Wiser.—p. 67.
  I. Embarkation and Disembarkation of Hospital Ship Patients. R. B. Toller.—p. 73.
Pneumoroentgenarthrography as Diagnostic Aid in Internal Derangements of Knee. J. B. Butts and J. T. Mitchell.—p. 77.
Effect of Bite-Wing Roentgenograms on Navy Dental Examination Findings. J. M. Dunning and G. W. Ferguson.—p. 83.
Seventy-Eight Hundred Scarlet Fever Patients. J. C. McMillan Jr. —p. 89.
Convalescent Serum and Pooled Plasma in Communicable Diseases. A. C. Rambar.—p. 93.
Penicillin in Intrapleural Infection. J. Jacobson.—p. 97.

Virginia Medical Monthly, Richmond

73:1-44 (Jan.) 1946

Postwar Plans for Returning Medical Veterans.—p. 1.
Some Strange Tumors. W. L. Peple.—p. 4.
Postoperative Pneumonia and Atelectasis. M. L. White Jr.—p. 9.
Meckel's Diverticulum: 56 Cases. F. S. Johns and J. K. Wilson.—p. 17.
Hyperpnea Test for Latent Coronary Artery Disease: Preliminary Report. N. Bloom.—p. 21.
Control of Hemorrhage After Tonsillectomy: Use of Thrombin. F. H. McGovern.—p. 23.
Bacterial Endocarditis and Penicillin: Report of 2 Cases with Diabetes. W. R. Jordan.—p. 25.

Western J. Surg., Obst. & Gynecology, Portland, Ore.

53:413-456 (Dec.) 1945

Chronic Sclerosing Osteitis. H. W. Meyerding.—p. 413.
Fibular Bone Graft in Ununited Fractures of Neck of Femur. M. S. Henderson.—p. 422.
Mortality After Operation. E. R. Schmidt and O. V. Hibma.—p. 427.
Gastric Adenomas: Pathologic Study. J. H. Kieniets and A. C. Broders. —p. 433.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Industrial Medicine, London

2:183-252 (Oct.) 1945

Vesication and Some Vesicants M. W. Goldblatt.—p. 183.
Control of Hazards in Luminous Dial Painting Industry. J. C. Jones and M. J. Day.—p. 202.
Methyl Iodide Poisoning. A. Garland and F. E. Camps.—p. 209.
Solubility or Distribution Coefficient of Carbon Tetrachloride in Water, Whole Blood and Plasma. Joan F. Powell.—p. 212.
Incidence of Sepsis in Industrial Wounds. R. E. O. Williams and E. H. Capel.—p. 217.

Lancet, London

1:1-40 (Jan. 5) 1946

Prognosis and Patient. L. Cole.—p. 1.
Transmissible Disease in Rats: Inoculated with Malaria from Cases of Infective Hepatitis. F. O. MacCallum and J. A. R. Miles.—p. 3.
*Delimitation of Subcortical Tumors by Direct Electrography. W. G. Walter and V. J. Dovey.—p. 5.
*Schistosomiasis: Intensive Treatment with Antimony. W. Alves and D. M. Blair.—p. 9.
Treatment of Schistosomiasis. W. G. Mills.—p. 12.
Large Missile Lodged in Face with Minor Clinical Disturbance. T. Gibson.—p. 13.
Determination of Pathogenicity of Tubercle Bacilli by Their Intermediate Metabolism. J. Lehmann.—p. 14.

Delimitation of Subcortical Tumors by Electrography.—Walter and Dovey say that, often even after localization of a lesion by neurologic examination, electroencephalography and air replacement, exposure of the cortex may reveal nothing, and the surgeon must resort to needling of the subcortical tissue. To supplement this subjective method, a needle electrode has been made with which the electrical activity of the subcortical structures may be recorded. The needle is used by the surgeon like an ordinary brain needle, except that recordings are made at every centimeter of depth. Differences of consistency can of course still be appreciated. When the electrode enters a tumor, abscess, hematoma or a ventricle, electrical activity becomes minimal. It reappears when the electrode emerges on the far side of a lesion. Electrical exploration in three dimensions can be carried out to establish the limits of the abnormal or aneural zone. The method can be used to supplement conventional methods of identifying and locating subcortical tumors at operation. The presence of a space occupying lesion can be detected by its electrical inactivity. Normal cerebral white matter is identifiable by rhythmic electrical activity of the same type as that found in the cortex. White matter adjacent to a space occupying lesion displays slow delta activity similar to that seen in the cortex in the same condition. The spatial extent of a lesion and the zone indirectly affected by it may be delimited with satisfactory precision.

Intensive Antimony Treatment in Schistosomiasis.—The cases described by Alves and Blair involved men, mostly Africans, with either urinary or intestinal schistosomiasis. They were diagnosed by a cercarial antigen intradermal test. The dose of sodium antimonyl tartrate was 12 mg. per kilogram of body weight. It was found that the total dose could easily be administered in six injections, and these were given at 9 a. m., 12 noon and 3 p. m. on each of two successive days. Since it would be difficult to inject smoothly 2 cc. of fluid in five minutes the injection was made up to 10 cc. with a 5 per cent dextrose saline solution. A vein in the antecubital fossa was chosen and the needle inserted. It was found that the same vein and indeed the same puncture could be used for all six injections. As soon as withdrawal of blood has shown that the needle is in the vein, the exact time is noted and the injection is begun. With the piston moving steadily, the injection is given at the rate of 2 cc. or less per minute. A minimum time of five minutes is taken to complete the injection. This slow and steady injection of the drug is of fundamental importance in the success of the treatment. This multiple syringe technic using sodium antimonyl tartrate was used in 100 cases of schistosomiasis. Viable eggs were not found immediately after treatment or at two months and three months after treatment. In 53 cases followed up for two months the cercarial antigen skin test had become negative in all but 14 cases. Nine of the 14 skin test positive cases were observed for three months, and the test became negative in 6 cases in this period.

Practitioner, London

156:1-80 (Jan.) 1946

Scope of Neurosurgery H. Cairns.—p. 2.
Modern Views on Etiology and Treatment of Acute Anterior Poliomyelitis. P. Cloake.—p. 10.
Peripheral Neuritis: Polyneuritis, Multiple Symmetrical Peripheral Neuritis. F. M. R. Walshe.—p. 19.
Modern Views on Concussion. F. R. Ferguson and L. A. Liversedge.—p. 26.
Subarachnoid Hemorrhage. J. St. C. Elkington.—p. 33.
Acute Respiratory Catarrhs. W. D. D. Small.—p. 40.
Posture. A. B. Appleton.—p. 48.
Pregnancy and Tuberculosis. Josephine Barnes.—p. 56.
Names of New Drugs. P. Hamill.—p. 61.
Early Recognition of Disease: I. Heart Disease. C. Bramwell.—p. 65.

Quarterly Journal of Medicine, Oxford

14:183-230 (Oct.) 1945

*Therapeutic Trial of Penicillin in Infective Conditions of the Skin. J. W. T. Davies, K. Dixon and C. H. Stuart-Harris.—p. 183.
*Nicotinic Acid Content of Blood in Health and Disease. C. W. Carter and J. R. P. O'Brien.—p. 197.
Hereditary and Familial Aspects of Exophthalmic Goiter and Nodular Goiter. L. Martin.—p. 207.

Penicillin in Infections of Skin.—Davies and his associates investigated the efficacy of treatment of pyoderma with penicillin as compared with other remedies. Penicillin was in most cases applied as an aqueous spray containing 1,000 Oxford units per cubic centimeter. In one group of patients penicillin spray was administered to the lesions on one side of the body, and the results were compared with those of other remedies applied to the lesions on the opposite side. In a second group of patients all the lesions were sprayed with penicillin and the results compared with a control group receiving other forms of treatment. Lastly, a small group of patients received large doses of penicillin by intramuscular injection (400,000 Oxford units daily). Only in annular (staphylococcic) impetigo was penicillin greatly superior to other remedies. Cases of this disease were few. In seborrheic dermatitis, which was the main type of pyoderma treated, penicillin was not more effective than other remedies. In ecthyma, penicillin compared unfavorably with other remedies. The exudate obtained from the lesions was examined bacteriologically before, during and after treatment. Culture resulted in the isolation of staphylococci or hemolytic streptococci or both in 99.5 per cent of the 200 cases examined. All strains of streptococci (isolated from 97 cases) and the vast majority of the staphylococci (in 182 out of 197 cases) originally isolated from the lesions were sensitive to penicillin. Success or failure of therapy could not be correlated with the flora isolated. In spite of treatment penicillin sensitive organisms were usually recovered from the lesions after three days of treatment. In some cases penicillin resistant staphylococci appeared during treatment, and this phenomenon increased in frequency as treatment was prolonged. The presence of penicillin resistant strains of staphylococci was not the cause of resistance to penicillin treatment, since in many refractory cases sensitive staphylococci were recovered after prolonged spraying as well as after intramuscular therapy. All strains of hemolytic streptococci isolated from the lesions both before and after penicillin treatment were sensitive to penicillin.

Nicotinic Acid Content of Blood.—Carter and O'Brien determined the concentration of nicotinic acid in the blood of 60 persons who appeared to be in normal health. The mean level for whole blood was 438 micrograms per hundred cubic centimeters. The normal range lies within the limits 260 to 573 micrograms per hundred cubic centimeters of blood. Repeated determinations have been made over a period of twenty-six weeks in 2 subjects. It was found that the blood concentration of nicotinic acid is constant over a period of time but is temporarily increased after the administration of large doses of nicotinamide. Prolonged administration of nicotinic acid appears to lead to the attainment of a degree of saturation in the blood which is limited by the ability of the blood cells to fix nicotinic acid as coenzymes. The nicotinic acid concentration in the blood in a variety of pathologic conditions does not greatly differ from normal values. Hyperthyroidism and sprue may be associated with low values. Myeloid leukemia with a high polymorphonuclear count is associated with high nicotinic acid values. Pernicious anemia may give low values, whereas in hypochromic anemia normal values are observed. It is concluded that the concentration of nicotinic acid in the blood does not provide a useful nutritional index.

Medical Journal of Australia, Sydney

2:385-416 (Dec. 8) 1945

Natural Bacterial Agglutinins in Child's Serum. F. Draper.—p. 385.
Amebiasis in New Guinea, 1943-1944. B. Hall and J. J. Billings.—p. 393.

Revue Belge des Sciences Médicales, Louvain

16:221-300 (July) 1945

Intra-Auricular Temperature and Thermic Criterion of Physicopyrexia. A. Bessemans, P. Wittebolle and Late A. Gelens.—p. 221.
*Streptococcic Antifibrinolysin. M. Graffar.—p. 230.
Conditions in Which Arterial Hypertension Returned to Normal: Part Played by Central Nervous System. A. van Bogaert and F. van Baarle.—p. 242.
Influence of Sex on Untoward Reactions from Blood Transfusions. W. de Weerdt.—p. 254.
Untoward Reactions from Blood Transfusions. P. Moureau.—p. 258.

Streptococcic Antifibrinolysin.—Graffar found that the plasma clot in 55 of 58 normal adults was dissolved by cultures of streptococci in less than thirty minutes. The plasma clot in 17 of 26 adult patients convalescing from acute hemolytic streptococcus infections was resistant to the solving effect of cultures of streptococci. This resistance is attributable to the presence of a specific antifibrinolysin. The plasma clot of 15 patients with pneumonia, bronchopneumonia, tuberculosis of the lungs or typhoid was dissolved in less than thirty minutes. The plasma clot of 2 patients with Osler's endocarditis showed a moderate resistance to fibrinolysis. This may be attributed to the rheumatic disease and to the hemolytic streptococcus infection which preceded it rather than to the secondary infection with Streptococcus viridans. Serum of normal persons manifested a moderate but measurable antifibrinolytic activity. Neutralization of the fibrinolysin by the serum is to be considered as a quantitative reaction. The antifibrinolysin of the serum deteriorates when submitted to high temperatures. The antifibrinolysin was destroyed by an exposure to a temperature of 75 C. for one hour. The plasma clot in 14 of 24 newborn babies was resistant to streptococcic fibrinolysis. The level of the antifibrinolysin in the serum of the newborn was close to the level of the serum of the mother. A relationship was not demonstrated between the degree of resistance to fibrinolysis of the plasma clot of the newborn and the antifibrinolytic activity of its serum. The factor which produces the resistance to fibrinolysis in the newborn is therefore not the specific antifibrinolysin, and its nature has not been determined.

Ophthalmologica, Basel

110:1-112 (July-Aug.) 1945

Aberrant Fibers of Fasciculus Opticus. G. T. Hultquist.—p. 1.
Retraction Nystagmus in Encephalitis Due to Brucella Abortus Infection. M. Heim.—p. 15.
Measurement of High Refraction Values in Keratokonus. M. Amsler and O. Klauser.—p. 29.
New Instruments for Keratoplasty. M. Girardet.—p. 34.
*Successful Treatment of Sjögren's Syndrome with Methyl Testosterone. R. Brückner.—p. 37.
Physiologic Angioscotomas. R. Weekers and M. Humblet.—p. 43.
Primary Familial Lenticular Dysplasia. M. Gruber.—p. 60.

Methyl Testosterone in Treatment of Sjögren's Syndrome.—Brückner reports the history of a woman aged 47 who presented Sjögren's syndrome. She had been troubled with keratitis, dryness of the conjunctiva, foreign body sensation in the eyes, burning sensations in the tongue, pharynx and vulva, a cold and dead sensation and lancinating pains in the fingers, cramps in the joints of the feet and dryness in the mouth and nose. Since the woman was in the menopausal age, incretory disturbances were suspected. She was given daily one or two tablets containing 5 mg. of methyl testosterone by lingual administration. The tablet was not swallowed but had to be absorbed by the oral mucous membrane. This medication has suppressed the keratoconjunctivitis sicca as well as the other symptoms of the syndrome for eighteen months. If the medication is interrupted for more than a week, the symptoms recur.

Medicina, Madrid

13:311-383 (Nov.) 1945. Partial Index

*Penicillin in Anthrax. E. Alvarez Sainz de Aja.—p. 345.

Penicillin in Anthrax.—Alvarez Sainz de Aja reports good results in 3 out of 4 cases of anthrax from perifocal injections of penicillin or local application of the drug together with intramuscular injections. He placed the perifocal injections at four points of the anthrax lesion without incising it. Failure of the treatment in 1 case occurred when penicillin was given late in the course of the disease.

Nordisk Medicin, Gothenburg

25:505-678 (March 23) 1945. Partial Index

Hygiea

*Question of Thromboembolism: Summary of Twenty Years' Experience. S. Johansson and S. Holmdahl.—p. 524.
12,000 Cases of Evipal Anesthesia: Experimentation and Experiences. A. Westerborn.—p. 528.
New Simple Method of Treatment of Recurrent Luxation of Shoulder Joint. Helge Camitz.—p. 531.
Treatment of Wounded Finlanders in Surgical Division I of Sahlgren Hospital, 1942-1944. T. Sahlström.—p. 532.
*Experiences Regarding Value of Citric Acid and Phosphatase Tests for Surgical Indication. A. Westerborn.—p. 567.
Recent Experiences Regarding Value of Citric Acid, Phosphatase and Bilirubin Analyses in Differential Diagnosis in Diseases of Liver-Biliary Ducts. J. Lehmann.—p. 572.
*Nonhemolytic Forms of Jaundice with Negative Direct van den Bergh Reaction. G. Welin.—p. 575.
Contribution to Question of Inoculation Hepatitis. M. Odin.—p. 581.
Subacute Temporal Periphlebitis. S. Eckerström.—p. 585.
Facial Pareses. B. Ewert.—p. 586.
Results of Treatment of Pneumonia During Last Six Years. G. Fänge. p. 588.
Is Prophylactic Vitamin K Treatment of Newborn Necessary? A. Wallgren.—p. 606.
Pathogenesis of Hyperpyretic Forms of Malignant Syndrome. Y. Åkerrén.—p. 608.
Residual Cavities After Thoracoplasty. L. Blecher.—p. 626.
Movement of Mitral Ring During Heart Action: Kinetographic X-Ray Study. H. Odqvist.—p. 627.
Experiences from One Year's Fluorographic Examination of Personnel of Swedish Ball Bearing Factory, Gothenburg. S. Langert and G. Runström.—p. 630.

Thromboembolism.—Johansson and Holmdahl conclude that postoperatively early rising and early exercise are at present the only practical measures for the prevention of thromboembolism. Prophylaxis with heparin or dicumarol is still in the experimental stage. Dicumarol is recommended in treatment of manifest thrombosis. In manifest pulmonary embolism, eupaverin, eventually in combination with heparin, is the sovereign agent.

Citric Acid and Phosphatase Tests in Surgical Indications.—Citric acid and phosphatase analyses were made in 200 cases of gallstones and in diseases of the biliary tract. Westerborn finds them valuable adjuncts to the clinical examination in differential diagnosis of hepatitis and mechanical obstruction but not decisive for diagnosis or as indications for surgery. In uncomplicated cases of inflammation or calculi in the gallbladder the tests do not give satisfactory information.

Nonhemolytic Jaundice with Negative Direct van den Bergh Reaction.—Welin states that mild or latent jaundice, intermittent or chronic, with this reaction is relatively common without signs of disturbance in hemopoiesis or chronic indurative liver processes. Hyperbilirubinemia of this kind can occur (1) as a constitutional inadequacy, (2) in ulcers, (3) in other gastrointestinal disorders or (4) as a residue of acute hepatitis. It seems to be a sign of a liver disturbance revealed mainly by reduced ability to eliminate bilirubin, and also by hypercitricemia. Its benign character has been verified by liver biopsies.

Book Notices

Pulmonary Edema and Inflammation: An Analysis of Processes Involved in the Formation and Removal of Pulmonary Transudates and Exudates. By Cecil K. Drinker, M.D., D Sc., Professor of Physiology, School of Public Health, Harvard University, Boston, Mass. The Nathalie Gray Bernard Lectures delivered at the Bowman Gray School of Medicine, Wake Forest College, Winston-Salem, North Carolina, in December 1944, together with a fifth chapter on Artificial Respiration. Harvard University Monographs in Medicine and Public Health [Number 7]. Cloth. Price, $2.50. Pp. 106, with 27 illustrations. Cambridge, Mass.: Harvard University Press; London: Oxford University Press, 1945.

This small monograph is based on a series of lectures describing experimental studies on pulmonary physiology carried out by the author and his associates. However, the bedside application of the findings is stressed with an insight undoubtedly based on Drinker's early clinical training and obvious interest in practical problems. Most of the physiologic studies deal with the influence of various factors on lymph drainage from the lung of the anesthetized dog. It is pointed out that the normal exit of lymph drainage from the lung is quite inadequate, forming a veritable bottle neck, which is often unable to keep pace in terms of removal with a reasonably steady and rapid production of excess tissue fluid. This is one reason why the pulmonary capillaries possess such a distinct vulnerability to edema. Another reason deals with the fact that exudation obviously blocks the entrance of air to the alveoli, which impairs aeration and leads to anoxia. Anoxia itself is a primary cause for increased permeability of pulmonary capillaries; in other words, anoxia begets anoxia, thus forming a vicious circle.

The beneficial influence of respiratory movements on lymph flow is emphasized and exemplified clinically by the deleterious effect of shallow breathing. Deep respirations not only promote lymph flow but clear the finer bronchioles and stimulate the normal respiratory reflex. In this way aeration is increased and the tendency toward anoxia diminished. An added factor is the erect position, which increases vital capacity and thus justifies the present trend toward early ambulation after operation. The physiologic importance of movement is expressed in the statement "Man is never absolutely sure to remain still physically for any length of time unless he is anesthetized or dead."

In a detailed discussion on the therapeutic use of oxygen the obvious but often overlooked point is made that such therapy is clearly ineffective unless the gas reaches the alveoli; in other words, unless something is first done to clear the air passages. More important is the emphasis placed on the early use of oxygen before extensive obstruction has occurred. Morphine, because of its depressant action, should not be given a dyspneic patient unless he is at least in an oxygen tent.

The last portion of the monograph is devoted to a discussion of artificial respiration. The efficacy of simple methods is emphasized. Mouth to mouth insufflation for acute cessation of respiration can always be used at once, thus saving precious time, which is important, as the chances of recovery fall rapidly after the passage of three or four minutes of complete apnea. Simple insufflation, which distends the alveoli, stimulates the normal respiratory reflex and is probably the reason why this method is so effective in most cases. The same stimulus can be obtained with an ordinary simple gas mask as used by anesthetists. These considerations are emphasized by the author at some length, in contrast to the inapplicability and even danger of the various appliances which are recommended for starting respirations which have suddenly ceased. A distinction must be made here, however, in the case of artificial respiration as a substitute for normal breathing in cases of various types of paralysis. This presents quite another problem and the advantages of the Eve procedure, which provides alternate suction and compression on the lungs through the diaphragm by means of a tilting device, are described and the method recommended. For this purpose other types of mechanical respirators are of obvious utility. On the other hand, Drinker underscores his objections to certain machines for the emergency treatment of sudden cessation of respiration as follows: "The medical profession has for years had incessant sales onslaughts of ingenious mechanical engineers who have devised appliances which are enormously attractive mechanically, very expensive, and little regardful of physiological or pathological consequences."

Although a few of the statements made in this monograph may arouse disagreement, it will be read with considerable interest by all those concerned with pulmonary physiology and with the many clinical details in the bedside care of patients with pulmonary disease. It should prove of practical value as a provocative source of information and as a stimulus to the thinking of all practitioners confronted with the problem of treating pulmonary edema.

Facial and Body Prosthesis. By Carl Dame Clarke, Ph.D., Associate Professor of Art as Applied to Medicine, School of Medicine, University of Maryland, Baltimore. Cloth. Price, $5. Pp.. 200, with 75 illustrations. St. Louis: C. V. Mosby Company, 1945.

For those who are interested in prosthesis, this book will undoubtedly be a useful guide. It is one of three books published in this country on the subject, all three of which appeared in 1945. No doubt the war was an added impetus for the publication of these books.

The author in the first chapter discusses prosthesis (moulage prosthesis) in general. He defines its advantages and limitations as compared with plastic surgery and points out where such restorations are most useful. This chapter includes references to some of the most useful materials for reconstruction of noses and ears, such as latex and plastics, with mention of some of the older materials not in use, such as metals and gelatin-glycerin compounds. Chapters II, III, IV and V deal with materials used in the technic of molding and casting, all of which are indirectly related to the problem of prosthesis. Chapter III, on wax molds, appears to be mislabeled, since only the first page out of thirty-three contained in the chapter deals with the subject of wax molds. Chapter VII, on the control of expansion and contraction of rubber casts, contains interesting data on experiments conducted to find means of compensating for the shrinkage of the final prosthesis.

The book contains valuable information regarding the technic of making full facial casts with various types of impression materials. The technic of taking impressions of the head and face with hydrocolloid materials is given in detail. The problem of making prosthetic hands with latex compound is given considerable space, and some of the technical suggestions made should prove valuable for those who are interested in this difficult prosthetic problem. The author's discussion on coloring of the latex prosthetic restoration is useful. He sets forth the basic problems that are encountered in obtaining lifelike skin color and offers methods of accomplishing this. A selected list of pigments and solvents for these pigments is given. The chapter on restoration of cranial defects deals with one method of filling in such defects, namely the preformed bone chip method. The technic of making a suitable mold in which bone chips may be molded to the desired contour before they are inserted under the skin by the surgeon is explained. The chapter on the use of elastic or rubber-like plastic is necessarily short, since use of the material is still in its experimental stage. A fairly complete bibliography is given at the end of each chapter, and the illustrations are clear.

Physical Treatment by Movement, Manipulation and Massage. By James B. Mennell, M.A., M.D., B.C. Fifth edition. Fabrikoid. Price, $7. Pp. 512, with 288 illustrations. Philadelphia: Blakiston Company, 1945.

A considerable number of alterations have been made in this edition. The illustrations are excellent, new ones have been added, and old ones have been omitted. Numerous alterations have been made in the text; for example, the author gives a summary of the treatment of infantile paralysis with physical medicine. Mennell states that the views expressed in these pages are founded on the result of many years of close observation, study and experiment. He modestly continues "It is possible some of my deductious are erroneous, but at least they are capable of being argued and are not merely arbitary." His chapters on massage show the outcome of the actual experience of a medical man who has really studied massage in theory and practice. His classification of the massage movements and his principles have generally been accepted by the Council on Physical Medicine of the American Medical Association. There are a number of chapters on the treatment of recent injuries by mobilization and massage which should interest those treating these injuries as well as the chapters on the treatment of the after-effects of injury, the reeducation of muscle and reeducation in walking. The chapters on backache, excellently illustrated, are taken from the author's monograph "Backache." These chapters give many points on examination and manipulations for backache. The author says that many of the views herein expressed are unorthodox, and many of the views on backache may fit into this class but they should be read and tried by those interested in physical medicine. The volume contains much valuable information and should be available to all physicians interested in physical medicine.

Libro azul médico mexicano, 1945-46. Paper. Price, $6; 30 pesos. Pp. 279. Mexico, D. F., 1945.

After several years in preparation, the first edition of a Mexican "Medical Blue Book" has been issued, containing information on about 1,300 physicians throughout the country and about 275 dentists in Mexico City and Guadalajara. The director of the publication states that all data in the book have been supplied by the physicians and dentists themselves without incurring any obligation whatever on their part, and that all claims as to graduation and licensure have been verified. The directory is arranged geographically by state, city and surname. The information given on each physician or dentist may include his home and office address, telephone numbers, medical school and year of graduation, registration number, specialty, an indication that he has x-ray equipment, his nationality, place and date of birth, foreign languages spoken and special honors conferred on him, such as faculty and civil appointments and memberships in national and special medical societies. Of considerable help to many users of the directory should be the device of printing each surname in capital letters to distinguish it from other parts of the full name and thus minimize the difficulty of correctly addressing those whose names are combinations of the paternal and maternal surnames. The publisher stresses the fact that the work is necessarily incomplete, as only persons whose medical education could be verified have been included in the first edition, and he pledges that "the work will continue and improve as time goes on." It is hoped that future editions will improve to the extent of including an alphabetical index of the physicians and dentists listed. This index should distinguish between physicians and dentists and indicate the state and city in which they are located, so that information on members of the medical profession in Mexico can be easily located even when only their names are known. The value of the book for reference purposes is also somewhat diminished because of the omission of a table of contents, which is needed to make the information more readily accessible, especially in view of the fact that the book does not have adequate headings on each page to guide the reader. As the scope of future editions enlarges, the addition of information on medical schools and hospitals recognized by the profession would also be of assistance to users of the Mexican "Medical Blue Book."

Physical Chemistry of Cells and Tissues. By Rudolf Höber, University of Pennsylvania School of Medicine, Philadelphia, Pa. With the collaboration of David I. Hitchcock, Yale University School of Medicine, Laboratory of Physiology, New Haven, Conn., J. B. Bateman, Mayo Clinic, Rochester, Minn., David R. Goddard, University of Rochester, Biological Laboratories, Rochester, N. Y., and Wallace O. Fenn, University of Rochester School of Medicine and Dentistry, Rochester, N. Y. Fabrikoid. Price, $9. Pp. 676, with 70 illustrations. Philadelphia & Toronto: Blakiston Company, 1945.

The application of physical and physicochemical principles and methods to the study of biologic problems has resulted in many valuable contributions to our understanding of the complex relationships that exist in living cells. In spite of this fact, however, progress has been relatively slow and our knowledge of this field is still fragmentary. One reason for this slow rate of advance is probably the fact that too few of the older investigators are sufficiently well trained in mathematics, physics, chemistry, physical chemistry and biology to plan and carry out significant work in this borderline field. And yet such work will have to be done, in increasing amounts, before we may expect really to understand the complex chemical and physical reactions that take place in living protoplasm. For these reasons the publication of a book like this one by Höber and his collaborators is significant for the future of cellular physiology. By summarizing our knowledge of the physicochemical reactions of living cells it not only calls attention to the advances which have already been made in this field but also serves to suggest, to the careful and critical reader, further lines of investigation which may prove fruitful in the future. Above all, books of this character, by indicating the great possibilities in this field, should stimulate students to master the necessary fundamental sciences so that not only may they be better equipped to read and understand work of this kind but that they may themselves be in a position to do creative work in this highly important field.

This book is divided into eight sections, containing thirty-eight chapters. Section 1, by David I. Hitchcock, deals with selected principles of physical chemistry and includes chapters on diffusion in liquids, reaction velocity and enzyme action, thermodynamics, electromotive force and some properties of aqueous solutions. Section 2, by J. B. Bateman, deals with the physicochemical properties of large molecules and their architectural and functional significance in living matter. Sections 3, 4 and 5, by Rudolf Höber, are concerned with the architecture of protoplasm, the structure and properties of cell surfaces and the influence of some extracellular factors on cellular activity. Section 6, by David R. Goddard, discusses the respiration of cells and tissues. In section 7 Wallace O. Fenn discusses contractility, including a general survey of contractile tissues and of muscles. Finally section 8, by Höber, deals with passive penetration and active transfer in animal and plant tissues and includes chapters on such subjects as intestinal absorption, formation of urine and elaboration of digestive juices. This mere listing of section headings is by itself inadequate so far as indicating the wide variety and scope of the subjects treated in this book is concerned. This is not a book to be read casually, especially by one who does not have the necessary mathematical and physicochemical background. It is a book which, studied carefully, will prove stimulating to students of biology and medicine interested in gaining a better understanding of the structure and properties of living protoplasm and of the complex chemical and physicochemical reactions which help to endow living protoplasm with its unique properties.

The Osseous System: A Handbook of Roentgen Diagnosis. By Vincent W. Archer, M.D., Professor of Roentgenology, University of Virginia Department of Medicine, Charlottesville, Va. Cloth. Price $5.50. Pp. 320, with 148 plates. Chicago: Year Book Publishers, Inc., 1945.

This book recognizes the need for adequate training and experience in radiology before attempting diagnosis by x-ray, but it will be found helpful by practitioners whose work is not confined to that specialty. The book covers examination of the bones for fracture and disease and constantly refers to the normal structures and variations. A new departure is the presentation of diseases of the bone under the pathologic findings instead of under the conventional headings. This appears to be a more direct approach from x-ray examination to diagnosis. The illustrations are carefully correlated with the subject matter and clearly labeled for quick interpretation. The x-ray reproductions are of exceptionally fine quality. Hints and criteria are given for judging the quality of films and for a clear and logical approach to diagnosis. A systematic method for routine examination is presented. Timely warnings of pitfalls to be avoided by the diagnostician are given. This book should be helpful to both the general practitioner and the radiologist.

Doctor! Do Tell! Interesting and Entertaining Human Interest Episodes Which Forty Odd Years in the Field of Medicine and Surgery Have Disclosed. By Dr. Victor F. Marshall. Fabrikoid. Price, $2.50. Pp. 235, with 6 page plates. Appleton, Wisconsin: C. C. Nelson Publishing Company, 1945.

The story of a life is always interesting, especially the story of a long life devoted to serving the sick. That is what Dr. Marshall's autobiography represents. Childhood, medical school and active surgical practice in a Wisconsin town are related in brief sketches, with emphasis on human interest and with a generous admixture of subdued humor. The development of medicine of the last forty-five years is portrayed here as reflected in the practice of a busy surgeon, including sulfonamides and the Rh factor. Some day historians will find in books like this a true picture of medical practice of the period it represents.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

ALTITUDE AND HEART DISEASE

To the Editor:—The wife of a friend of mine who lives in the central part of Mexico (about 6,000 feet above sea level) has been suffering from some sort of heart trouble and has been advised to move to a lower altitude, as it actually has been found that when she comes down to this city, the altitude of which is about 2,000 feet, she really feels better. Would it be possible to improve conditions by constructing a pressure room in order to equalize the barometric pressure by actually pumping air into the patient's room at least during the night hours? It would be necessary, of course, to provide for an outlet for the air that has been let in small enough to maintain the desired pressure. Do you think this experiment would be worth while trying? F. Vela-Gonzalez, M.D., Monterrey, N. L., Mexico.

Answer.—The barometric pressure at 6,000 feet is approximately 609 mm. of mercury, and the calculated oxygen tension in the alveoli is around 75 mm. of mercury. Although it might seem that the fall in the alveolar oxygen tension from the normal of 104 or 105 at sea level to around 75 at 6,000 feet is considerable yet this is responsible for only a slight lowering of arterial oxygen saturation. This is clearly shown by a glance at the oxyhemoglobin dissociation curve of arterial blood; the upper part of the curve tends to flatten out so that at tensions of 75 mm. of mercury the arterial blood may still be 92 to 93 per cent saturated as compared with the normal of around 96 per cent.

Most people with heart disease while at rest do not have a significant lowering of the arterial oxygen saturation; hence a change from sea level to 6,000 feet or the reverse should not be important except during activity. It probably would not be worth while to pressurize the patient's room because in all likelihood little or nothing would be gained. Even assuming that an increase in alveolar oxygen tension is desirable, it would be simpler and far more economical to increase the percentage of oxygen in the inspired air. It should also be emphasized that variables other than barometric pressure might account for the patient's greater feeling of well-being at the lower altitude.

PERSISTING FISTULA AFTER APPENDECTOMY

To the Editor:—A Mexican woman aged 28 had an appendectomy one year ago. She has had a draining abdominal sinus ever since. Smears and culture reveal only Staphylococcus aureus. There is no fecal odor. X-ray examinations of chest and bones are negative for any bony pathologic changes. Chest x-ray examination reveals an old calcified inactive tuberculosis. Neoiopax solution injected through the sinus into the abdomen followed by x-ray examination reveals dye in the intestinal tract. For treatment the patient received 1 million units of penicillin intramuscularly every three hours without effect; that is, 20,000 units every three hours. Staphylococcus vaccine did not help. Local penicillin irrigations have not helped. Her physical condition is good except for a mild secondary anemia. Occasionally she will have a mild fever when drainage slows down. I would appreciate knowing the next step to take; if surgical, would you leave a drain in until the patient is completely well? Would you use the cautery? Is there any treatment besides surgery?

Arthur L. Henrichsen, M.D., Van Nuys, Calif.

Answer.—"A persisting sinus or fecal fistula following appendectomy for acute appendicitis is due to an ulcerative or granulomatous lesion of the region, an abscess cavity, gangrene, constriction of the intestine below the fistula or a foreign body. Fistulas resulting simply from the pressure of drains, misplaced sutures, the nicking of the intestine, inversion of the appendical stump or failure to invert it generally heal spontaneously. Persistence of the fistula is evidence of an inherent lesion of the intestinal wall or a microscopic or a macroscopic foreign substance" (Lichtman, A. L., and McDonald, John R.: *Surg., Gynec. & Obst.* **78**:449 [May] 1944). These foreign bodies include suture material, cotton fibers, talc, petrolatum or lycopodium. Cases have also been described in which adult Ascaris lumbricoides, the ova of Tenia saginata, Endameba histolytica and Actinomyces fungoides were thought to play a part in the formation of fistulas. In cases in which the external opening is small, sinus tracts infected with Escherichia coli can simulate the fecal discharge and can be easily confused with a suppurative saccular fecal fistula in which an abscess cavity is interposed between the internal and the external opening and which discharges fecal or purulent material intermittently.

Spontaneous healing of most postoperative fecal fistulas will occur unless there is a foreign body in the tract, in which event operative removal is essential to a cure (Deaver, J. B.: *Ann. Surg.* **83**:782 [June] 1926. Ray, B. S.: *New York State J. Med.* **38**:412 [March 15] 1938). Some authors have reported spontaneous closure of fistulas as long as seven years after their appearance.

In cases requiring surgical treatment the following procedures are to be considered (Lichtman, A. L., and McDonald, J. R.: *Surg., Gynec. & Obst.* **78**:449 [May] 1944):

1. Extraperitoneal curettage and packing, indicated when a foreign body is suspected and when a little freshening in an epithelial lined tract will promote granulations and closing.

2. Simple extraperitoneal closure. In this procedure the skin around the stoma is freed and the walls of the fistula are dissected away from the abdominal wall. The dissection is carried down to the peritoneum, which is pushed back so that the fistula can be clamped and excised with the knife or cautery. The fistula is excised with a longitudinal incision in the intestinal wall. The mucosa of the intestine is then inverted in a transverse direction with two or three rows of sutures. Five Gm. of sulfathiazole may then be dusted into the area, and the abdominal wall is then closed in layers. A drain may be placed down to the fascia. This method is useful when the fistula is small and thin and the internal opening is small.

3. Intraperitoneal procedures, which include simple repair with excision of the fistula, simple repair with plastic operation on the intestine, side to side anastomosis with or without excision of the fistula, extraperitoneal resection, colostomy or ileostomy. Usually simple tubular fistulas after appendectomy yield good results with simple intraperitoneal closures. Fistulas originating in granulomatous lesions of the ileum, cecum or colon require resection. Greater safety and a cleaner surgical procedure can be secured by the preliminary performance of ileostomy or colostomy in large fecal fistulas.

The choice of a procedure will depend on an accurate preoperative diagnosis of the course and the extent of the fistula and on the findings at the time of operation.

CHRONIC MERCURIALISM

To the Editor:—A patient states that she received mercury poisoning four years ago from inhaling mercury fumes while melting amalgam dental fillings. Would this cause enlargement of the spleen sufficient to give aching in the left upper quadrant? At the present time the spleen shows only a slight enlargement by x-ray. M.D., Georgia.

Answer.—Chronic mercurialism is characterized by fine intention tremor, psychic irritability of an exaggerated degree, dermographia, excessive perspiration and abnormal readiness to blush, exaggerated tendon reflexes, pallor and certain abnormalities of the mouth. Mercury is eliminated in the urine, feces, saliva, sweat, bile and milk. The greater number of authors tend to localize the central nervous system disturbances in the nuclei of the base of the brain; the cerebral cortex also may be affected. Mercury is stored principally in the kidneys, liver, spleen and bones. In the examination of 59 cases of chronic mercurialism in the felt hat industry by Neal and others (Mercurialism and Its Control in the Felt Hat Industry, Public Health Bulletin 263, 1941) and 43 cases of chronic mercurialism in the fur cutting industry (A Study of Chronic Mercurialism in the Hatters' Fur Cutting Industry, Public Health Bulletin 234, 1937), no cases of enlargement of the spleen were found. Therefore it is probable that the enlargement of the spleen in this case, four years after the occurrence of mercury poisoning, is not due to chronic mercurialism.

OVARIAN CYSTS

To the Editor:—It appears to be the custom in our local clinic, during any routine laparotomy, to inspect the ovaries and to puncture with a needle or the point of a scalpel any translucent area, allowing a small amount of yellowish looking fluid to escape. These pockets of fluid on the ovaries are called cysts. Could you discuss the etiology and pathology of these pockets of fluid? M.D., Utah.

Answer.—The majority of the cysts referred to are atretic follicles in various stages of degeneration. Only one out of every hundred follicles develops in the normal manner and goes on to form a typical corpus luteum cyst. The remainder become corpora atretica, and during the process of involution varying amounts of yellow or clear fluid often collect. This fluid possesses estrogenic activity. On section these so-called cysts are lined with theca interna cells, which may be more or less flattened according to the amount of fluid contained. It is the current conception that the formation of these small cysts is a normal one and that puncturing them is not of value. If, however, they are large enough to necessitate removal, excision rather than incision is the method of choice.

UNILATERAL MYDRIASIS

To the Editor:—A man aged 25 had an injury to his left eye seven weeks ago. A small particle of metal was removed from his cornea, and homatropine 5 per cent was used afterward to dilate the pupil. He recovered from his injury, but the pupil remains dilated. Pilocarpine 1 per cent and physostigmine 0.5 per cent will not pull the pupil back to its normal size permanently. The vision is good for far and near in the affected eye. The eye is normal in all other respects. Five years ago both pupils were dilated for refraction and were normal afterward in proper time. The right pupil measures 2 mm. and the left 5 mm. The fundus is normal. The particle removed from the eye was too small to injure the lens. What can be done to bring this pupil back to normal?

S. A. Kleger, M.D., Astoria, Ore.

ANSWER.—An injury sufficient to produce unilateral mydriasis and no paralysis of accommodation must be more severe than in the case described. It must lead to a rupture of the sphincter pupillae or a paralysis of pupillary action because of damage to the nerve endings in the iris. Rarely an intraorbital traumatic lesion that will irritate the ciliary ganglion is encountered. It is more likely that in the case described the dilated pupil is the result of some condition other than that of injury, and one must think of irritation of the cervical sympathetic nerve on the affected side. Such an irritation can be produced by a tuberculous lesion in the apex of the lung or a tumor or scar tissue in the neck that would incarcerate or at least irritate the cervical sympathetic nerve. When the irritation is removed, the pupil will generally return to normal size. It is suggested that a weak solution of pilocarpine nitrate 0.5 per cent used twice a day will be sufficient to keep the pupil reasonably small. However, a thorough investigation should be made of the patient's general condition to determine the cause of the dilated pupil other than the foreign body of the cornea, which was trivial.

CHARTS FOR MAPPING SENSATION

To the Editor:—Will you tell me where I can obtain "sensory charts" to be used in charting sensory disturbances in neurologic disorders?

S. A. W., M.D., Salt Lake City.

ANSWER.—Most of the charts commonly available are quite inaccurate. Many of these are available in the various textbooks of neurology. The most accurate studies of the areas of skin innervated by the various spinal roots and segments have been made by Foerster. An excellent diagrammatic presentation of his findings has been prepared by Lewis. These observations roughly parallel those of Head made several years earlier. Both Head's charts and Lewis's chart after Foerster have been reproduced by Fulton. For the most accurate sensory charts it would be best to have new charts prepared from these. However, charts prepared from the older diagrams can be obtained from the Physicians Record Company of Chicago and doubtless from other publishers of medical forms.

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INFRA-RED LAMP TO KEEP CHILD WARM

To the Editor:—A girl baby, aged 10 months, uncovers herself completely every night as soon as she is put to bed, no matter how cold the room. Regardless of how many times she is covered each night she immediately uncovers herself. After trial of many different kinds of models of blankets and garments it was found that the only way to keep the baby warm was to have a small infra-red lamp at a certain distance from her crib connected the whole night. Could this prolonged exposure to the infra-red rays cause any damage to the child?

F. A. Bonaventura, M.D., San Diego, Calif.

ANSWER.—Infra-red rays are merely heat rays. If a therapeutic lamp is used for the purpose described, harmful effects are not to be expected as long as the lamp is kept far enough away from the surface of the child's body to prevent any concentration of intense heat on the surface of the body. Infra-red rays do not possess mysterious or unusual properties. In fact, rays from an ordinary infra-red generator which glows at a dull red heat (600 to 800 C.) do not penetrate so deeply as do the rays from an ordinary tungsten filament bulb. It has been pointed out that the "infra-red coil" used by the physician does not differ from the coil used in the familiar household heater with the exception that the household heaters have a wider reflector shaped somewhat like a soup plate which diffuses the heat through the room, whereas the physician's infra-red lamp has a more concave reflector shaped somewhat like a coffee cup which converges the radiant heat on a small area. Provided the radiation is not concentrated too intensely on one surface of the child's body, no harm should ensue. The only damage which could be done would be burning, which would be perceived instantly by the child and which would cause pain. Since the lamp is already being used without any discomfort to the child, there is no reason to expect that there will be any deleterious effects. The application described merely converts the physician's infra-red lamp into a form of household heater. With due precaution, the same procedure might be recommended in similar cases.

REACTION AFTER THYROIDECTOMY

To the Editor:—A woman aged 48, complaining of a lump in the neck of ten years' duration, a tired feeling most of the time and some difficulty in swallowing, was admitted to the hospital for study. Examination revealed a large nodular goiter in the right side of the neck, moderately advanced graying of the hair and apprehension but otherwise minimal signs of toxicity. The pulse ranged between 80 and 110, and the blood pressure was 160/80. Urine and blood studies were negative with the exception of a mild renal glycosuria, the glucose tolerance test being normal. A chest plate was negative. Basal metabolism tests were plus 45, plus 29 and plus 22 on three successive occasions during the first ten hospital days. Shortly thereafter a subtotal thyroidectomy with removal of a 5 by 4 by 4 cm. nodular area in the right lobe was performed under nitrous oxide and ether anesthesia. Iodine was not used preoperatively. When the patient returned to the ward the pulse rate was 132 and the blood pressure 157/80. By 4 p. m. her temperature was 101.4 F. (rectal). The temperature remained elevated between 100 and 102 F. for the next five days, when it fell to normal and remained there. The pulse rate continued at 130 to 140, and on the second postoperative day auricular fibrillation with an apical rate of 160 commenced. Digitalis was started, though there were no signs of failure. On the next day normal sinus rhythm returned, with a rate of 100, and the digitalis was stopped. Lugol's solution by rectum was started on the first postoperative day. The remainder of the hospital course was unremarkable. The basal metabolic rate on the twelfth postoperative day was plus 1. During the first few days after operation, physical examination of the patient was negative and no cause for the temperature elevation could be found. The patient had no complaints, and the only positive findings were as stated. Did this patient have a mild thyroid crisis or is some other explanation of this episode more likely?

John R. Roberts, M.D., Auburn, N. Y.

ANSWER.—The postoperative reaction described is characteristic of that seen after a subtotal thyroidectomy for toxic goiter. Some rise in temperature postoperatively is the rule, and a rectal temperature of 102 F. for several days is about what would be expected.

The pulse rate was higher than is usually seen, but this fact can be explained by the auricular fibrillation. The onset of auricular fibrillation in the postoperative period in a woman aged 48 with a toxic goiter is not surprising. Auricular fibrillation occurring under these circumstances may be disregarded in the absence of any associated cardiac findings. If the patient is well compensated it should not be regarded seriously.

The fact that the patient felt so well after operation would rule out completely the presence of a mild thyroid crisis. In retrospect it might be said that it would have been well to give iodine preoperatively.

PELVIC MEASUREMENTS AND LABOR

To the Editor:—I should like a statement regarding the possibility of a successful delivery at full term of a patient whose pelvic measurements made by x-ray are given as true conjugate 12, transverse 12, right oblique 11, left oblique 11. The report further states that "The pelvis is rather unusual in shape. The coccyx angles posteriorly."

Ewart S. Sarvis, M.D., Sumas, Wash.

ANSWER.—The inlet measurements of this pelvis are within the range of normal and a normal sized child should have no difficulty in engaging. However, without measurements of the midplane and lower pelvis it is impossible to say what the whole picture of the bony pelvis is. From the fact that the coccyx angles posteriorly it would seem that there was room, at least in the anteroposterior diameter of the midplane. A more complete pelvimetric survey of this pelvis is desirable.

VITAMIN D AND RENAL DAMAGE

To the Editor:—A patient has frequency of urination when taking vitamin D capsules. The capsules were made by a reliable drug firm and the dose was two capsules a day. Does vitamin D produce a diuresis? Is it harmful under these circumstances?

W. J. Klinck, M.D., Lennoxville, Que.

ANSWER.—There is no evidence that vitamin D in ordinary doses (up to 1,500 units a day) causes frequency of urination or renal damage. In doses of 50,000 units or more daily vitamin D may cause renal irritation and eventually tubular degeneration. This is true particularly when the diet contains a large amount of calcium, that is when the patient takes as much as three glasses of milk a day.

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MEDICAL PROGRESS AND MEDICAL EDUCATION DURING THE WAR

PERRIN H LONG, M D.
Baltimore

It would be premature to attempt to survey with an air of finality the progress which has been made in medicine during the past five years. Many of the data bearing on this subject are still listed as being in the category of classified information, other data cannot be evaluated critically, and, finally, only the faint outlines of the total impact of the war on medicine are visible at the moment. However, it does appear timely to conduct an initial inquiry into the topic, and this paper, which necessarily is preliminary in nature, will be presented for the purpose of stimulating further thought on and analyses of this subject. In considering the question of "Medical Progress and Medical Education During the War," it is proposed to divide it into two main parts. The first will deal with certain of the scientific advances which were made in medicine during the war. The second will concern itself with the effects of war on the professional qualifications and on the education of doctors and medical students.

ACCELERATION OF RESEARCH

It can be said that one of the first effects of the war was to shift the emphasis in medical investigation to problems concerning the care of the wounded, to the prevention and treatment of infectious diseases and to those physiologic and psychologic problems which arose from placing individuals in exotic environments. With this change in emphasis came also a shift from an individualistic type of research to that conducted by groups of investigators whose activities were directed and coordinated for the common good. This was necessary in order that time might be saved and needless reduplications of effort avoided. In the United States this coordination was effected for the Committee for Medical Research of the Office of Scientific Research and Development by the various committees and boards of the Division of Medical Sciences of the National Research Council working in conjunction with the Board for the Investigation of Epidemic Diseases, U. S. Army, the various civilian, army and naval research laboratories, the Canadian National Research Council and the Medical Research Council, the chemical factories and the flying personnel committees in Great Britain. It was also true that, as time was an important factor and there were many practical questions which had to be answered, research largely was concerned with new applications of existing knowledge rather than with the search for fundamental principles.

It may be said that while an adequate liaison and a satisfactory system for the exchange of technical information was maintained between the civilian agencies, *this was not always true as far as certain military* agencies were concerned. While objections were not made officially to the receipt of classified military medical information by civilian investigators, restrictions were placed on the official exchange of such information. As a direct result, information was withheld which was vital for the proper planning and execution of civilian medical research programs. It must be stated in all fairness that the coordinated research program on malaria was a notable exception to this general policy. A great deal of information covering the professional and research aspects of medicine, surgery, neuropsychiatry, preventive medicine and nutrition, which was embodied in special reports, sanitary reports and essential technical medical data reports, was received from overseas theaters of operations. Certain of the data contained in these reports would have greatly assisted those who were planning research programs. However, it was not until the summer of 1945 that this type of data was made freely available to responsible civilian agencies. The policy of not making such data freely available to accredited civilian investigators created an intellectual vacuum, a situation which would be considered intolerable in any concept of total war.

In any consideration of medical progress during the war, it can be said that the experimental and clinical development by Florey and his associates[1] of Fleming's[2] observations on antibacterial effects of penicillin was outstanding. As the story of penicillin has been dealt with so amply it will not be discussed in this presentation with the exception of saying that due credit must be given to the workers in the Regional Agricultural Laboratory at Peoria, Ill., and to the American pharmaceutical, chemical and distilling industries for their noteworthy performance in producing penicillin in quantities which four years ago would have been thought to be fantastic and unattainable. Their genius for organization and production should receive the highest praise from a grateful people. There can be no doubt of the properties of penicillin in helping to save life and limb, but, as far as its role in the care of the wounded is concerned, it must be considered in con-

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From the Department of Preventive Medicine, the Johns Hopkins University School of Medicine The cooperation of the chairmen of the following committees of the National Research Council extended cooperation which made the preparation of certain parts of this communication possible the Committees on Industrial Medicine, Sanitary Engineering, Shock, Blood and Blood Substitutes, Tropical Diseases, Aviation Medicine, Armored Fighting Vehicles, Cardiovascular Diseases, Neurological Surgery and Vascular Injuries and the Board for the Coordination of Malarial Studies Helpful suggestions were given by Drs E D. Churchill, J S. Lockwood, James Bordley III and L H. Weed.

[1] Chain, E; Florey, H. W., Gardner, A D., Heatley, N. G; Jennings, M. A; Orr Ewing, J, and Sanders, A. G: Lancet 2:226, 1940

[2] Fleming, A: Brit J. Exper. Path 10:226, 1929.

junction with other adjuvants to surgical therapy, such as plasma, serum albumin, whole blood and the sulfonamides.

The development of resuscitation therapy for the prevention and treatment of shock and of replacement therapy for the maintenance of the blood in the seriously wounded has been an interesting story. Many of the properties of whole blood, plasma and serum in the prevention and the treatment of shock were well known prior to 1939, and hence the problems at the beginning of the war in respect to these agents were those of efficient utilization and production. On the basis of knowledge and conditions existing in 1940-1941 it was deemed advisable to select dried plasma as the agent of choice for use in the resuscitation of the seriously injured, and the aid of the American Red Cross was enlisted for the procurement of the quantity of blood which was necessary to assure adequate supplies of plasma for the armed forces.

It had been noted by the British in the Middle East in 1941-1942 that the administration of plasma, while being valuable as a first aid measure in combating shock, did not bring about the overall favorable results which were noted following the administration of whole blood to seriously injured casualties. This observation, which was not new, substantiated the British organizational concept of the need for blood transfusion units to provide adequate amounts of whole blood in theaters of operations. The British point of view concerning the need for whole blood was sustained by American experience during the Tunisian campaign early in 1943 and led to the establishment of individual blood banks in hospitals in the North African Theater of Operations. This system was maintained in that theater until January 1944, when, following the arrival of the needed supplies, a central collecting and distributing blood bank was established. This bank, supported by military donors, supplied the needed amounts of whole blood for the remainder of the Italian campaign. Its success, coupled with an awakening realization by the services of the value of whole blood in the treatment of the wounded, led to the development of a program by the middle of 1944 which provided for the shipment by air of large quantities of blood from the United States to the European and Pacific theaters of operations.

Other interesting developments in the field of blood and blood substitutes were the development of serum albumin and fibrin products by Cohn [3] and his associates. Serum albumin was used for the treatment of shock both in the seriously wounded and in the seriously burned. In the wounded, according to the best available observations,[4] 25 Gm. of serum albumin gave results comparable to 1 unit of reconstituted plasma. Theoretically this amount should have been equivalent to 2 units of plasma in the well hydrated patient. It could not be demonstrated however that, except for its small bulk, serum albumin was superior to reconstituted plasma in the treatment of the seriously injured. Serum albumin proved to have its greatest value in the supportive treatment of burns and, because of its osmotic power, especially in those burned patients who had become edematous from the retention of excessive quantities of parenterally administered fluids. Fibrin products were found to be uesful adjuvants in surgery.

Despite the fact that much has been said about the value of sulfonamides in the prevention of all types of infection in wounds during the second world war, the results of carefully controlled studies on this point show that, while serious spreading infections may be controlled by the oral administration of sulfonamides in adequate doses, the development of local wound infection is little influenced by the local or systemic use of these drugs. From army and naval surgeons who have served in overseas theaters of operations, impressions at times glowing, at others damning, have been received concerning the value of sulfonamides in the prevention and treatment of infection in the wounded. However, little controlled factual evidence relative to the value of sulfonamides in the wounded is available. In the North African Theater of Operations, during a period in which certain surgeons were praising the virtues of sulfonamide prophylaxis of wound infection while other surgeons were denying its value, studies made on blood concentrations of the sulfonamides in an adequate sample of wounded (all of whom according to the record were receiving sulfonamides by mouth) showed that 24 per cent had either a trace or no sulfonamide in their blood. In the majority of these patients the concentrations of sulfonamides in the blood were below those which are known to be effective. It is evident from these data that reports concerning the efficacy or lack of efficacy of sulfonamides in the prevention of infection in the wounded must be taken with a grain of salt if not supported by studies of the concentration of sulfonamides in the blood.

The record which has been made in this war by American surgeons in their treatment of the wounded is enviable. To date the record shows that but 4.5 per cent of the wounded have succumbed. This is to be compared with a death rate of 8.26 per cent in wounded American soldiers in the American Expeditionary Forces in the first world war and a 10 per cent death rate which was recorded in wounded German soldiers during the first four years of the present war. This saving of life has been achieved primarily by the skill of American surgeons and their ability to develop rapidly the concepts which were necessary for the intelligent management of the wounded. Few if any of the surgeons had ever experienced the flow of gross trauma which faced them when the battle was on and casualties began to pour in. Their conceptions respecting preoperative, operative and postoperative treatment had to be altered to fit the conditions under which they had to work. Their intellectual flexibility, their ingenuity at improvisation and their constant attention to detail in the care of the wounded provided a great tribute to the system of medical education which developed these surgeons. Their record was not equaled by that made by any other nation.

Important advances were made in the prevention and treatment of disease during the war. One of the interesting advances was concerned with the use of tetanus toxoid in the Army. Ramon [5] and his associates had demonstrated the possibility of immunization against tetanus in the nineteen thirties. In the late summer and fall of 1940 the Medical Department of the Army made repeated attempts to impress the War Department general staff of the value of tetanus toxoid and to introduce its use as a universal practice in the Army. These efforts were rebuffed by the War Department general staff because of the fear of adverse criticism from antivaccination groups if another immunization procedure was added to those already in use. (It is to be noted that in matters of health the Medical Department functions only in an advisory capacity to the general staff.) In the middle of 1941 the general staff reversed its position and authorized the immunization of all personnel in the Army of the United States with tetanus toxoid. Rarely has an immunization procedure been so effective, there being but 3 recorded cases of tetanus in the immunized personnel of the Army during the entire war. Tetanus developed in only 1 battle casualty.

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[3] Cohn, E. J.: Medicine 24: 333, 1945.

[4] Beecher, H. K., and Burnett, C. H.: M. Bull. North African Theat. Op. (no. 1) 2: 2, 1944.

[5] Ramon, G.: Rev. d'immunol. 5: 479, 1939.

Immunization against epidemic typhus proved to be very reliable. The value of this procedure has been overshadowed by the later spectacular use of DDT in controlling civilian epidemics of typhus. In the winter and spring of 1942-1943 typhus was epidemic in North Africa and there were hundreds of thousands of instances of the disease in the civilian population. Among American army personnel who had been immunized and reimmunized with the Cox type of typhus vaccine only 2 mild cases of the disease were recorded in the first four months of 1943, while during the same period in a comparable group of Allied troops in whom vaccination was not initiated until the end of February or the first of March, 1943 a total of 43 cases were recorded, with a case fatality rate of roughly 30 per cent.

In the process of the preparation of serum albumin, gamma globulin was produced in considerable quantities.[5] This fraction of human plasma was found to contain a variety of antibodies[6] and was shown by Stokes, Maris and Gellis[7] to be highly effective in preventing or attenuating measles. Later Stokes and Neefe[8] and Stokes and Gellis[9] demonstrated that gamma globulin, when administered in adequate doses, appeared to protect passively against infectious hepatitis.

Another important advance which was made during the war was the development of a formalized vaccine which conferred a certain degree of immunity against influenza. It was demonstrated[10] during the epidemic of influenza in the fall of 1943 that the administration of a single subcutaneous dose of 1 cc. of the vaccine exerted a definite though not a completely protective effect in vaccinated subjects. The results obtained in these controlled studies were striking enough, however, to warrant a large scale immunization program against influenza to be launched in the Army in 1945. In view of the epidemic prevalence of influenza in the late fall and early winter of 1945, reports of the effect of this program for the prevention of influenza in the Army will be awaited with great interest.

A great deal of information was obtained during the war concerning the prophylactic and suppressive effects of certain drugs against infections. As the result of studies carried out by the Commission on Epidemiological Survey and the Commission on Meningococcal Meningitis of the Army Epidemiological Board it was demonstrated that sulfadiazine in amounts as small as a single dose of 2 Gm. was very effective in eliminating the meningococcus carrier states which existed in individuals at the time the drug was administered. These observations thereby provided a method for interrupting or terminating epidemics of meningococcic meningitis which may prove to be very useful. The effects of sulfadiazine in the prophylaxis of beta hemolytic streptococcic infections was also studied during the war.[11] Here, however, the results were not as happy as in the instance of the meningococcus studies. It was found that, while this type of prophylaxis was effective in eliminating hemolytic streptococci from the throats of many carriers, strains of the organisms which were resistant to sulfadiazine (possibly as the result of the use of the drug in prophylaxis) appeared and produced considerable outbreaks of tonsillitis, pharyngitis and scarlet fever. As a result of these experiences it would seem that sulfonamides should be used with caution in the prophylaxis of hemolytic streptococcic infections. Their use in the control of an epidemic in closed groups would seem justifiable, but until further experience has been gained their use for the prophylaxis of streptococcic infections in the mass appears to be questionable.

As a result of the tactical employment of American troops in certain of the most malarious areas in the world, much has been learned during the war concerning the suppressive effects of quinacrine. It was found that the original plan of administering 0.2 Gm. of quinacrine twice a week was not very effective in suppressing malaria. In certain areas this scheme of administering the drug for suppressive purposes was followed by acute and at times severe toxic reactions (nausea, vomiting, diarrhea and fever) after the third or fourth dose of the drug had been given. Extensive experimental and field studies on the pharmacology and suppressive effects of quinacrine, which were made possible during the war by the development of a fluorometric method[12] for determining the concentration of the drug in the body fluids and tissues, demonstrated not only that the administration of 0.1 Gm. of quinacrine daily produced far fewer acute toxic reactions but that this dosage, if taken conscientiously, produced a high degree of suppression of malaria produced by Plasmodium vivax and a causal prophylactic effect as far as infections produced by Plasmodium falciparum were concerned.

Because of the fact that quinacrine acted only as a suppressive agent against infections produced by P. vivax, extensive investigations were carried out under the auspices of the Board for the Coordination of Malarial Studies. This board was composed of representatives of the Army, Navy, United States Public Health Service, Office of Scientific Research and Development and the National Research Council. In one of the most beautifully coordinated programs which marked scientific endeavor during the war, some fourteen thousand chemical compounds were studied for their antimalarial activities. The pharmacology and toxicology of a large number of these compounds were investigated, and about eighty of them showed promise enough to warrant clinical investigation in human malaria. While no true causal prophylactic was discovered, chloroquine, or 7-chloro-(4 diethylamino-1-methylbutylamino) quinoline, was found to be "an effective suppressive when administered no more frequently than once weekly in a well tolerated dose."

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[6] Enders, J. F.: J. Clin. Investigation **23**: 510, 1944.

[7] Stokes, J., Jr.; Maris, E. P., and Gellis, S. S.: J. Clin. Investigation **23**: 531, 1944.

[8] Stokes, J., Jr., and Neefe, J. R.: Prevention and Attenuation of Infectious Hepatitis by Gamma Globulin, J. A. M. A. **127**: 144 (Jan. 20) 1945.

[9] Stokes, J., Jr., and Gellis, S. S.: Personal communication to the author.

[10] Clinical Evaluation of Vaccination Against Influenza: Preliminary Report by Members of Commission on Influenza, Board of Investigation and Control of Influenza and Other Epidemic Diseases in the Army, Preventive Medicine Service, Office of Surgeon General, United States Army, J. A. M. A. **124**: 982 (April 1) 1944.

[11] Prevention of Respiratory Tract Bacterial Infections by Sulfadiazine Prophylaxis in Navy, United States Navy Department, Bureau of Medicine and Surgery, 1944.

[12] Brodie, B. B., and Udenfriend, S.: J. Biol. Chem. **151**: 299, 1943.

The problem of the environmental control of acute respiratory infections received a considerable amount of attention during the war. It was shown by Robertson[13] and his co-workers of the Commission on Air-Borne Infections that glycol vapors were highly effective in the sterilization of air. In fact, it was found that a concentration of as little as 1 Gm. of triethylene glycol in several hundred million cubic centimeters of air was lethal for the common pathogens of the respiratory tract and also for the virus of influenza. Further studies on this subject demonstrated that it was possible to exert a decided effect on the content of pathogens in the air of hospital wards or barracks by the proper oiling of floors and bed linen. It would appear that the use of these methods for the environmental control of acute respiratory infections may be of considerable value in cutting down the incidence of cross and secondary infections in hospital wards and in relatively closed institutions.

The war focused the attention of those concerned with the prevention of disease on the possibilities for developing newer and more effective insecticides and rodenticides. It can be said without fear of contradiction that the development of dichlorodiphenyltrichloro-methylmethane (DDT) as a personal and environmental insecticide represents one of the most important advances in preventive medicine during this century. Following the demonstration in the North African Theater of Operations by Dr. Fred L. Soper and his group of the value of DDT in a dusting powder for delousing native populations, the use of such a powder for delousing the population in Naples in the winter of 1943-1944 averted a major civilian outbreak of epidemic typhus in Italy. The application of the experience in mass dusting which was gained in Naples to the displaced persons and prisoners of war in central Europe after V-E day not only cut short existing epidemics of typhus among such individuals but also prevented extensive outbreaks of the disease all over Europe. The utilization of the residual effects of DDT sprays has revolutionized practices for the control of flies, mosquitoes and moths in and about dwellings. The value of DDT in the elimination of mosquito larvae has been adequately demonstrated, and it seems not unlikely that as a result of this observation great progress may be made in the control of mosquito borne diseases.

The story of the role of the rat in the spread of disease has been so well described by the late Dr. Zinsser in his book "Rats, Lice and History" that it needs no retelling. The rat, despite all methods so far devised for his extermination, has multiplied until he has become not only highly destructive all over the world but also a constant menace to health. It was not surprising, therefore, that research was initiated at the request of the armed forces for the purpose of finding more effective rodenticides. As a result of investigations made during the past five years two effective agents which may in time supersede all others have been developed. These are alpha-naphthyl-thio-urea, which is called antu, and sodium fluoracetate, or 1080. Both are highly toxic, stable and acceptable to rats, and antu is distinguished by the fact that in rodenticidal doses it is not toxic to most large animals or to human beings. Its effectiveness has been well established in a progressive campaign of deratting which has been carried out in Baltimore for the past two years.

Important advances were made during the war in our understanding of the principles of water sterilization. The investigations of Gordon Fair and his associates of Harvard University have done much to clarify the mode of action of chlorine in the disinfection of water. It is now generally believed that the major disinfecting action of chlorine compounds is more or less proportional to the amount of unionized hypochlorous acid which is released when these compounds are dissolved in water. Further researches demonstrated that, under the conditions such as frequently exist, chlorine compounds were not very satisfactory for the disinfection of water in canteens because the amount of chlorine required for sterilization rendered the water unpalatable. A search was made for compounds suitable for canteen disinfection, and it was found that certain of the triiodides were very effective.

Many notable studies were conducted on the physiologic adjustments which man would have to make in order to remain effective or even alive in the environments in which he was placed. Oxygen masks have been developed which permit trained men to fly at substratosphere altitudes. Pressure suits which permit "pull-outs" in high speed dives and tight spirals have been developed. The study of "bends" and "bubble formation" has contributed much information which is valuable in the selection of certain types of flying personnel, and the prevention of "bends" by preoxygenation. For the first time in our history the science of clothing has been developed, with the result that much is now known about the fundamentals of fabric and their ability to transfer heat and water vapor. Studies of the stresses which the human organism may stand in crash injuries have demonstrated that with proper cockpits or other similar enclosed spaces the body may withstand crash injury in a degree considered impossible prior to the war. Notable studies were made on the factors which govern night vision, with the result that practical methods were developed for improving night vision in specialized personnel. Extensive studies were made on the behavior and acclimatization of man to high and low temperatures. Definite advances have been made in our knowledge of the metabolic changes which occur at extremes of temperature and of the steps which need to be taken to maintain human beings at an effective level under such altered environments. The studies on the determination of salt and water requirements under such conditions have been especially interesting.

Certain advances in the fields of curative medicine were of signal importance. Of necessity the therapeutic developments in respect to penicillin are spotlighted. The clinical effectiveness of this antibiotic in the therapy of staphylococcic infections has been well established, and from the data now at hand one can say that the outlook for patients suffering from subacute bacterial endocarditis has been radically changed by the demonstration of the effectiveness of penicillin in this disease. Our concepts in respect to the treatment of gonorrhea have been revolutionized by penicillin therapy. Indeed, one can hope for the eventual practical elimination of this disease. It would be possible (even though not at the moment probable). Most notable and at the same time surprising was the curative effect of penicillin in practically all forms of human syphilis.[14] While it is too early to evaluate the eventual role of penicillin in the therapy of syphilis, it is fair to say that its use constitutes the greatest advance in this field since the demonstration by Ehrlich of the beneficial effects of arsphenamine. However, a note of caution must be interjected at this point, because for the time being the whole problem of the way to treat syphilis is in a ferment. Recently a leading syphilologist when asked "What is the best way to treat syphilis?" replied rather tartly "I knew definitely which was best until 8 p. m. 30 June 1943, but since then I do not know" (the time reference being to his first knowledge of Mahoney's results with penicillin in syphilis). The newer antibiotic streptomycin,[15] while still in the developmental stage, shows definite promise of being a welcome addition for combating infectious diseases.

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[13] Robertson, O. H., in Harvey Lectures, 1942-1943, Lancaster, Pa., Science Press, 1943, vol. 38, p. 227.

[14] Mahoney, J. F.; Arnold, R. C., and Harris, A.: Am. J. Pub. Health 33: 1387, 1943.

The war enormously increased our knowledge of the advantages and shortcomings of quinacrine in the therapy of clinical malaria. Prior to 1942 little was known concerning the pharmacology of quinacrine, and hence therapy with this drug was entirely on an empirical basis. This was well evidenced by the mode of administration of quinacrine in the treatment of malaria with quinine, quinacrine and plasmochin in which after two days of quinine therapy quinacrine in doses of 0.1 Gm. three times a day for five days was started. With what is now known concerning the rapidity of the excretion of quinine and of the plasmodiacidal concentrations of quinacrine, it is clear that under this system of therapy the malarious patient was relatively undertreated for a period of about thirty-six hours after the exhibition of quinacrine. Fortunately the brilliant and rapid development of methods[12] by which the pharmacology of quinacrine could be studied revolutionized the treatment of malaria with this drug and produced a rational method of treatment. Then it was possible for the first time to demonstrate that quinacrine was superior to quinine. It is also noteworthy that in the course of the investigations which have been alluded to before and which resulted in the discovery of the antimalarial properties of chloroquine, or 7-chloro-(4-diethylamino-1-methylbutylamino)quinoline, it was found that this drug would cause "an abrupt termination of the clinical attack of vivax malaria" and would "cure falciparum malaria when administered for only one or two days." Further, more recent investigations tend to show that a member of the 8-aminoquinoline group of compounds, SN 13276, may actually be curative in malaria caused by infection with P. vivax. Thus at the present time we have two drugs, quinacrine and chloroquin, which will cure malignant tertian malaria, and definite hopes that a curative agent for benign tertian malaria is just in the offing.

Another interesting development during the war was the discovery of an antiarsenical, 2,3,dimercaptopronal,[16] to which the name BAL (British Anti-Lewisite) was given. This compound was demonstrated to be an active therapeutic agent against the local and systemic action of certain arsenical war gases and also was found to be of value in the treatment of certain types of arsenical poisonings which occur in civilian populations. It has been shown that the drug is efficacious in the treatment of patients suffering from arsenical dermatitis, arsenical encephalitis and patients who have received overdoses of oxophenarsine hydrochloride (mapharsen). It may be of some value in treating the blood dyscrasias which may occur in the course of arsenical therapy. It is valueless in the treatment of alleged arsphenamine jaundice. Recent preliminary trials also seem to indicate that BAL will be of value in the treatment of mercurial poisonings.

Momentous advances in surgical technics did not stem directly from the war, although a great deal was learned about the surgical management of patients. However, during the war definite advances were made in the surgery of certain types of congenital malformations of the heart and great vessels. Now patency of the ductus arteriosus can be cleared in the vast majority of cases. The "Maladie Blue" does not have the same hopeless outlook as the result of Blalock and Taussig's[17] work, and Craford in Sweden has demonstrated that coarctation of the aorta can be corrected surgically.

After recording the achievements of civilian investigators during the war, it must be stated that a great deal has been added to the sum total of medical knowledge by personnel of the medical and other corps of the armed forces. It was characteristic of the system of medical education which produced them that made medical officers all over the world observe, contemplate and then record the various phenomena of disease. Many of these observations are still contained only in official reports, others are in the process of publication, and some will appear only in historical perspective. It can be said, however, that medical officers have contributed notably to the natural history of disease during the war. They have clarified the epidemiology, etiology and pathology of homologous serum jaundice and infectious hepatitis and have extended our knowledge of the clinical course of these diseases. They have contributed notably to the diagnosis, prevention and treatment of epidemic typhus. Medical officers have provided much that is new concerning the prevention, suppression, clinical course and treatment of malaria. The natural history of schistosomiasis, "scrub typhus" and filariasis and methods for the prevention and treatment of these diseases have been investigated by medical officers. Notable contributions have been made by them in the field of psychiatry. And, while carrying on these studies, medical officers attended the sick so efficiently that the overall fatality rate in admissions for illness was less than 0.1 per cent in World War II. This is to be compared with the fatality rate of 1.68 per cent for admissions for illness which was recorded in the first world war and a case fatality rate of 2.0 per cent for all illness occurring in the wehrmacht during this war through February 1944.

UNFAVORABLE EFFECT ON MEDICAL OFFICERS

It has been fairly easy to outline some of the advances which have been made in the medical sciences during the war because they represent specific and tangible additions to knowledge. It is much more difficult to assess definitely the impact of the war on the professional development of medical officers and on the education of medical students and doctors. It will be necessary in the consideration of this problem to discuss certain aspects of the practice of medicine in the Army.

Three factors limited the type of medical practice encountered in the Army. These were the initial screening of prospective patients, a process designed to eliminate the unfit; the age group of the patients, and the high incidence of injury in patients admitted to army hospitals. The practice of medicine was mainly focused on diagnosis and treatment of acute infections, of psychogenic disturbances and of battle and other injuries. The ordinary neoplastic, degenerative and metabolic diseases and many of the common surgical diseases were rarely seen. An analysis of 17,365 patients who were admitted to the medical service of a general hospital in the North African and Mediterranean theaters shows that malignant disease accounted for 0.07 per cent, blood dyscrasias for 0.08 per cent, metabolic diseases for 0.2 per cent, gastrointestinal diseases for 1.7 per cent, cardiovascular diseases 3.1 per cent, arthritic conditions for 3.7 per cent, dermatoses for 10 per cent, infectious diseases for 26 per cent and neuropsychiatric disturbances for 45 per cent of the admissions during a period of twenty-five months. This analysis demonstrates that during the course of a doctor's tour in the armed forces, even though he was fortunate enough to be in contact with patients, his professional experience and development were generally limited as compared with that which he might have experienced in civilian life. On the other hand, as a result of the global character of the war, many physicians in the armed forces became thoroughly conversant with malaria, the dysenteries, infectious hepatitis, scrub typhus, schistosomiasis, kala azar, filariasis, dengue and sandfly fever, diseases which in their past experience had appeared as clinical rarities or textbook oddities. Surgeons became acquainted with injuries of a type which they had never seen before and which, let us hope, they will never experience again. Medical officers became alert and at times, one might say, almost allergic to the possibility that psychogenic disturbances might be the basis for the patient's complaints. The practice of preventive medicine became a part of the daily routine of thousands of medical officers and for many was practically their sole approach to professional duties. Thus, for the period in which they served in the armed forces, medical officers, if in contact with patients, engaged in a type of practice which of necessity was specialized and which was not, with the exception of their experiences in preventive medicine, infectious diseases, gross trauma and psychogenic disturbances, of a type which normally would serve to fit them for civilian practice.

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[15] Waksman, S. A.; Bugie, E., and Shatz, A.: Proc. Staff Meet., Mayo Clin. **19**: 537, 1944.

[16] Waters, L. L., and Stock, C.: Science **102**: 601, 1945.

[17] Blalock, A., and Taussig, H. B.: Surgical Treatment of Malformations of Heart in Which There Is Pulmonary Stenosis or Pulmonary Atresia, J. A. M. A. **128**: 189 (May 19) 1945.

The organization of the Army is such that many medical officers had little opportunity to enjoy prolonged professional contact with patients during the war. This was especially true for battalion and regimental medical officers and, under certain conditions, for flight surgeons. For these officers the epitome of medical practice was often the holding of sick call and, when conditions were especially propitious, the attendance on the minor sick "in quarters" or in aid stations. Practically their entire time and thought were devoted to the prevention of disease. Their contacts with other medical officers were occasional, medical literature in the form of regularly appearing journals did not reach them, and frequently even such advice and counsel as was contained in the professional circular letters of theater or army surgeons did not filter down to their echelon. The same was essentially true for the medical officers in collecting companies. In the clearing companies of divisions and separate medical battalions, conditions were better. These units were better equipped for the practice of medicine, and during periods of relative inactivity or of rest it was possible for clearing companies to hold most of the minor sick or injured from their divisions. This meant that the medical officers in these units had a minor speaking acquaintance with the practice of medicine.

It can be said that, as a rule, in hospitals of all types there was at one time or another a chance for the assigned medical officers to practice medicine or surgery. The term "one time or another" was used purposely because the professional training of many medical officers in hospital units was frequently not utilized for long periods of time when their units were in "training" or were "staging." It is not within the scope of this presentation to discuss the wisdom of "training" programs or the problems of "staging." This subject has been mentioned only to show that, from the professional point of view, medical officers were often inactive and out of touch with patients.

It is recognized that from the educational point of view it is necessary for physicians to follow their patients from the beginning to the end of their illness if medical and surgical skill is to be developed. It is also true that interruptions of the course of treatment are not beneficial to patients. One of the great, though at times necessary, interferences in the practice of rational medicine or surgery in an overseas theater of operations during the war was the movement of patients from the front to the rear and from one hospital to another. This meant that, as far as the majority of patients were concerned, the medical officer responsible for initial definitive treatment never knew just what happened to his patients. This was especially true of battle casualties. Figures from the Fifth Army indicate that, during the campaigns in Italy during 1944, 78 per cent of the wounded were evacuated to the base section. Thus, surgeons in the auxiliary surgical groups and the field or evacuation hospitals who were responsible for the primary surgical therapy of these patients had little personal chance of knowing whether their initial decisions and actions in respect to therapy were correct. They generally received such information second hand from the base. To a lesser degree this same state of affairs existed in respect to the sick, with the result that physicians knew little of the eventual disposition of many of their patients.

Despite the difficulties which have been mentioned, the horizon of certain medical officers was enlarged by the war. For the surgeon, experience in wound surgery (if not too long continued) was not only a traditional but also a vital phase of his total training. The early education of a surgeon is in character of an apprenticeship which may lead to a provincial and dogmatic point of view. The sharing and pooling of surgical experience and the contact with other schools of surgical thought which marked the practice of surgery in a properly supervised theater of operations exerted a broadening influence on the intellectual growth of surgeons. The same was true for physicians, although in a lesser degree, because the practice of internal medicine is less subject to dogmatism and lends itself more to the standardization of its technics. The physician benefited from his exposure to exotic diseases, but his experience with such diseases cannot be considered as being vital in his total development.

It seems proper at this point to consider the fact that more than half of the practicing physicians in this country came under the prolonged control of administrators in the course of their service in the armed forces.

This experience came at a time when doctors in this country stood on the threshold of a social structure whose protagonists desired in one way or another to organize the medical profession into groups rather than to permit it to continue in its individualistic course. A prolonged experience in the armed forces, in which administration is definitely (and to be fair, necessarily) in the saddle, can be expected to leave indelible imprints. This seems to be particularly true because the administration embodied those undesirable attributes which are opposed in the peacetime practice of medicine. The reference is of course to those limitations in outlook and perspective which led to the tardy recognition of and inadequate concessions to professional needs.

The impact of this experience with administrators may not be apparent at once, as this group of doctors is being dispersed and is at present inarticulate. Also this is essentially a junior group, and it is returning to a junior rank in the hierarchy of American medicine. The full effects of this experience and the nature of the lesson learned will be apparent only in the maturity of these individuals and in their group judgments and actions in the years to come. It may have been fortuitous, as has been said, "for the profession, poised at the 'crossroads,' to have sent a large task force down the road where inefficient administrative control was rampant and three years later to have it rejoin the main force as seasoned (if disillusioned) troops."

DEFICIENCY IN TOTAL MEDICAL EDUCATION

The time is not ripe to state with any degree of finality what the impact of the war has been on the education of medical students in this country during the past four years. However, it seems possible at this time to discuss the effects of the war on certain aspects of medical education.

There can be little doubt that the faculties of the schools of medicine in this country were denuded by the armed forces. A survey of the teaching staff of the Johns Hopkins University Medical School in 1944-1945 shows that, roughly, 28 per cent of this staff were on leave of absence in the armed or other forces of the country. A further analysis shows that 35 per cent of the members of the "full time" or the senior teaching staffs were on leave of absence. In addition, seventeen of the members of the staff in the grades of professor or associate professor were on national committees or in consultant capacities having to do with the maintenance of the health of the nation or of the armed forces. As most of these committees were active, it meant that much time had to be spent away from normal academic duties. Then, on top of all this, the patient burden both in the Johns Hopkins Hospital and in private practice in Baltimore increased considerably during the war years. It is obvious from these statements that the net result was more to do, with fewer to do it. This situation was paralleled in all medical schools and hospitals in the country. It is impossible to evaluate the effects of the program for the acceleration of premedical and medical education, because it was carried out during a period in which it was impossible to control those other factors which are involved in medical teaching. However, if previous concepts in medical education were correct, the decrease in the time spent in premedical preparation, and the lack of opportunity for individual research or contemplation which marked this program in medical schools, were undesirable features.

The modern medical student finally fits himself for the practice of medicine during his period of residence on the house staff of a hospital. It would appear that our medical educational system has suffered most in respect to the training of interns and residents. To begin with, the majority of medical graduates, if physically fit, during the war received but nine months of training and, at the most, twenty-seven months. While intern staffs were not too seriously depleted, there can be little doubt that assistant residencies and residencies were cut to the bone. This meant that a decidedly increased patient load was thrown on intern and resident staffs at a time when such staffs were least prepared to assume such a burden. The result was that the resident staffs of hospitals were primarily concerned with the technics of patient care and with the movement of patients through the hospitals, and there was little time left to them for the study and contemplation of their patients. This, coupled with the diminished number of senior physicians who ordinarily counsel and teach the house staff, meant that the standards for the training of interns and residents fell appreciably during the war. It would seem that this failure in the training of interns and residents constitutes the most serious defect which developed in medical education during the war. Three classes of interns have graduated who have had but nine months of training and that under conditions which were distinctly substandard. In addition, because of their age and physical fitness, it is more than likely that when these interns entered the armed forces their assignments were to posts of battalion surgeon or their equivalent. It has been already shown that the opportunities for advancing a physician's professional education are distinctly limited in such a position. It is therefore quite clear that a heavy responsibility rests on the medical departments of both the Army and the Navy in respect to providing further hospital training for medical officers who have had but nine months of internship. Experience in the North African and Mediterranean theaters of operations demonstrated beyond question that a period of twelve or more months of field service for medical officers produced a type of professional stagnation for which months of rehabilitation in actual hospital work were required before the confidence and professional skill of medical officers returned. If this was the experience with medical officers, of whom many had had long years of training, it is not difficult to imagine what may happen in the group of medical officers who have had only nine to twelve months of hospital training, if they are removed from the practice of medicine for too long a time. It was demonstrated in the North African and Mediterranean theaters that it was possible to prevent the professional stagnation of medical officers by rotating them from the field to hospitals for duty. It is to be hoped for the future of medical practice in this country that the medical departments of the Army and Navy both at home and overseas contemplate a program of this type for the temporary medical officers who will be in service for the next few years. It must not be forgotten that just as great a responsibility for the professional rehabilitation of these medical officers rests on the civilian profession as on the medical departments of the armed forces.

In closing, consideration must be given to the possible implications of the recent directive from the Procurement and Assignment Service which dealt with the reconversion of the 9-9-9 program. The aims of this directive are to provide the armed forces (primarily the Army) with the needed numbers of physician replacements for 1946, to increase the number of residencies which will be available for physician veterans and to lengthen the period of internships to the traditional twelve months. To accomplish these ends the directive makes all physically fit nonveteran interns and residents liable for service in the armed forces by July 1, 1946. The immediate intent of this directive is admirable, but it is necessary to consider its possible effects on research and on the practice of medicine in the United States. The high standards of medical practice which have increasingly characterized American medicine during the past twenty-five years were not achieved by chance. They were the direct result of a calculated program for the continuous education of the young physician. The selection of the bulk of the young medical men in this country for service in the armed forces interrupts this program and transfers these individuals to the relatively limited and often sterile fields of military medicine at a time in their careers when their seeds of productivity in medical research normally begin to sprout. It remains to be seen whether these seeds will maintain their vigor or will die in the barren soil in which, by necessity, they frequently must be sown. If their vigor is to be maintained, these young men must be returned to the laboratories and clinics of this country within a reasonable period. Otherwise the present standards of American medicine will be compromised.

CONCLUSIONS

1. It seems reasonable to conclude that research and the results achieved therefrom were greatly accelerated during the war in such specialized fields as preventive medicine, the treatment of infections, aviation medicine, the management of surgical and psychiatric emergencies and the control or elimination of insect pests. It would appear that research has languished in the fields of neoplastic disease, endocrinologic disturbances, metabolic diseases and degenerative diseases during the past five years.

2. It is concluded, as far as the continuing professional education of the medical officer was concerned, that the general effect of the war was unfavorable.

3. The impact of a system of medical practice in which administrators were firmly in the saddle has undoubtedly left its imprint on more than half of the active doctors in the United States. It is too early to predict what the final reactions of the doctors toward administrative systems of medicine will be.

4. While it cannot be stated that medical education was substandard during the war, it seems certain that the student's total medical education before entering the armed forces has been deficient since 1943.

5. The present policy of making all physically fit medical graduates liable for military service after the completion of a twelve months internship will endanger the existing standards of medical practice in this country if these young men are held too long in the services.

6. A continuing program of professional rehabilitation must be provided for physician veterans. The medical departments of the Army and Navy and civilian medical schools and hospitals share a joint responsibility for the maintenance of this program.

615 North Wolfe Street, Baltimore 5.

PROCAINE INTRAVENOUSLY IN TREATMENT OF DELAYED SERUM SICKNESS

DAVID STATE, M.D.
and
OWEN H. WANGENSTEEN, M.D.
Minneapolis

In the course of exploring the possibility of employing crystallized bovine albumin (Cohn) as a blood substitute, instances of delayed serum sickness characterized by myalgia, arthralgia, urticaria, petechial rash and fever occurring ten to twenty-one days after injection was noted in [illegible] per cent of the patients injected. [illegible] agents such as epinephrine, ephedrine, codeine and calcium gluconate, although helpful in the mild cases, afforded no relief in the more severe reactions. The generalized myalgia and arthralgia in some cases were especially severe, and it was primarily to relieve distressing pain that intravenous procaine was given. However, the subsidence of all the manifestations of serum sickness was a pleasant surprise and occurred with such frequency as to encourage its employment in all subsequent instances of serum sickness.

Furthermore, we have attempted to explore its utility in the management of other states of hypersensitivity. A series of preliminary reports have been made on these data in a series of progress reports to the National Research Council, Committee on Medical Research, Office of Scientific Research and Development.[1]

PREVIOUS EMPLOYMENT OF INJECTIONS OF PROCAINE DIRECTLY INTO THE BLOOD STREAM

Procaine was first synthetized by Einhorn[2] in 1905. It soon became and has remained the most widely used of all local anesthetics. Although practically all studies are related to its use by local injection, still Bier[3] in 1909 anesthetized limbs by injecting procaine into the veins after rendering the part bloodless and applying a tourniquet to prevent toxic doses of the drug from reaching the remainder of the body. Goyanes[4] in 1912 anesthetized limbs in a similar fashion but injected the procaine into the artery instead of the vein. Lundy[5] used procaine intravenously for the relief of intractable jaundice. He observed that 20 cc. of 0.1 per cent solution was tolerated without difficulty and that relief from itching lasted for several hours after the injection. Leriche[6] gave intravenous injections of procaine for a wide variety of vasomotor disturbances, including acrocyanosis, Raynaud's disease, chronic varicose ulcers, posttraumatic vasomotor disturbances and painful amputation stumps, with good results. He believes that

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From the Department of Surgery, University of Minnesota Medical School.

The work described in this paper was done under a contract, recommended by the Committee on Medical Research, from the Office of Scientific Research and Development and the University of Minnesota Medical School

1. Wangensteen, O. H., and State, David: Unpublished observations.

2. Einhorn, A.: Ueber die Chemie der localen Anaesthetica, München. med. Wchnschr. 46: 1215-1234, 1899.

3. Bier, A.: Ueber einem neuen Weg Lokalanästhesia, in den Gliedmassen zu Erzeugen, Verhandl. d. deutsch. Gesellsch. f. Chir. 37: 204-213, 1908.

4. Goyanes, J.: El método ideal o conservador aplicado al tratamiento de los aneurismos de la arteria subclavia, Rev. clin. de Madrid 9: 287-294, 1913.

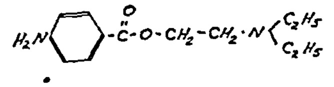
5. Lundy, J. S.: Clinical Anesthesia, Philadelphia and London, W. B. Saunders Company, 1942, pp. 392-393.

6. Leriche, R.: Petits moyens pour soulager facilement les douleurs des extrémités chez les artéritiques et dans certains trouble vaso-moteurs, Presse méd. 49: 641-645 (June) 1941.

procaine produces a widespread vasodilatation by the direct action on the endothelium of arterioles and capillaries. Gordon [7] used procaine intravenously with satisfaction on human beings to abolish the pain associated with the dressing of large burned areas. Breton and Gedoux [8] found that in doses of 1 mg. per 10 Kg. of weight intravenous procaine was able to prevent and combat drug idiosyncrasies but failed to prevent or combat the manifestations of anaphylactic shock in animals and serum sickness in man.

PHARMACOLOGY

Procaine is an ester of beta diethyl amino ethanol with the formula



It is employed usually as a hydrochloride salt and in this form is a crystalline powder, water soluble and thermostable. It is about one fourth as toxic as cocaine after intravenous or subcutaneous administration. It is readily destroyed in the body primarily by the liver, but some also is excreted unchanged in the urine. Like cocaine it affects all living tissue cells, but its main local action is on the nerve fibers, where it causes rapid attenuation and disappearance of nerve condition. Harvey [9] has also shown a curare-like action of procaine in the myoneural function by reducing the amount of acetylcholine produced as well as depressing the acetylcholine that is liberated.

Summary of Results of Procaine Injections

	Serum Sickness						
Results	Delayed Serum Sickness Following Bovine Albumin Injection	Immediate Reaction Following Bovine Albumin Injection	Delayed Serum Sickness After Antitetanus Serum	Specific Urticaria	Nonspecific Urticaria	Chronic Arthritis	Asthma
Complete and permanent relief	10	0	1	0	0	0	0
Partial and temporary relief	4	1	0	2	4	0	0
No relief	2	0	0	0	1	1	1
Total	16	1	1	2	5	1	1
				27			

Like cocaine, but to a lesser degree, procaine has the property of potentiating the responses of sympathetically innervated organs to epinephrine, sympathin and to sympathetic nerve stimulation.

In a review of the fatalities attending the use of local anesthesia, Mayer [10] found only two deaths attributable to procaine. In 1 case, that of a young man, 2½ grains (0.16 Gm.) of procaine as a 0.5 per cent solution with 1/15 mg. of epinephrine had been injected locally about the tonsils. After the removal of one tonsil the patient suddenly collapsed and died. Autopsy revealed the presence of status thymolymphaticus. The other patient, a boy aged 3 years with extensive burns, had a small amount of procaine (amount not stated) as a 0.5 per cent solution injected subcutaneously, and he suddenly developed cyanosis and convulsions and died. Whether the epinephrine was given also was not stated.

Minor reactions also occur characterized by stimulation of the central nervous system. However, in practically all instances epinephrine is injected subcutaneously, and how many of these reactions might be attributable to the latter is not definitely known.[11]

METHOD OF ADMINISTRATION

One Gm. of procaine diluted with 500 cc. of isotonic solution of sodium chloride was given intravenously by the gravity drip method at a height of approximately 4 feet above the bed level over a period of two hours. If given at a more rapid rate than this the patients often complained of flushing, dizziness and generalized numbness. All patients were carefully watched for signs of procaine sensitivity, and a syringe containing amytal for intravenous administration was available at the bedside to control any sensitivity symptoms should they arise.

OBSERVATIONS

In all, 27 patients were injected intravenously without any evidence of procaine reactions. Of this group 16 were treated for serum sickness following the injection of bovine albumin solution, 1 for an immediate anaphylactoid reaction following the administration of bovine albumin, 1 for serum sickness following the injection of antitetanus serum, 7 for urticaria due to known or unknown sensitizing agents and 1 each for chronic asthma and rheumatoid arthritis.

DELAYED SERUM SICKNESS FOLLOWING INJECTION OF BOVINE ALBUMIN SOLUTIONS

Of the 16 patients treated, 10 obtained immediate and complete relief after one or more injections of procaine. An additional 4 obtained only temporary or partial relief, and 2 were not benefited at all.

REPORT OF CASES

Case 1.—M. E., a white youth aged 19 years, under treatment for repair of ulnar and median nerve injuries, received 25 Gm. of bovine albumin solution ABC_{20} (Cohn) on May 18, 1944 without immediate reactions. On May 30 he developed headache, *anorexia and cervical lymphadenopathy* and on the following day a rash on his feet and legs. He was admitted to the University Hospitals on June 2, where examination revealed that he was seriously ill, with a temperature of 102 F., a maculopapular rash on the feet and legs, and generalized lymphadenopathy. On June 3 the rash extended to cover the abdomen, chest and upper extremities. On June 5 the maculopapular rash disappeared from the feet, arms and abdomen, but a purpuric rash was noted over the back. He also developed a bloody diarrhea and a fall in blood pressure to 80/60 mm. of mercury, necessitating the transfusion of 500 cc. of blood. Under symptomatic treatment the patient gradually improved, but the myalgia, arthralgia and fever persisted. He was given 1 Gm. of procaine in 500 cc. of saline solution intravenously on June 12 with complete and permanent relief of his residual symptoms.

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[7] Gordon, R. A.: Intravenous Novocaine for an Analgesia in Burns, Canad. M. A. J. **49:** 478-481, 1943.

[8] Breton, A., and Gedoux, A.: Nervous Mechanism of Anaphylaxis and of Allergy, Progrès méd. **70:** 412-414, 1942.

[9] Harvey, A. M.: Actions of Procaine on Neuromuscular Transmission, Bull. Johns Hopkins Hosp. **65:** 223-238, 1939.

[10] Mayer, Emil: The Toxic Effects Following the Use of Local Anesthetics, J. A. M. A. **82:** 876-885 (March 15) 1924.

[11] Hirschfelder, A. D., and Bieter, R. N.: Local Anesthesia, Phys. Rev. **12:** 190-282, 1932.

CASE 2.—O. H., a white man aged 62 with carcinoma of the stomach, received 25 Gm. of bovine albumin solution ACB₃₇ on June 16, 1944 without immediate reactions. On July 8 he developed arthralgia and a petechial rash on the chest, abdomen and extremities. The temperature ranged up to 104 F. daily. On July 8 he received 1 Gm. of procaine in 500 cc. of saline solution intravenously in three hours, with complete subsidence of fever, rash and joint pains in twenty-four hours (chart 1).

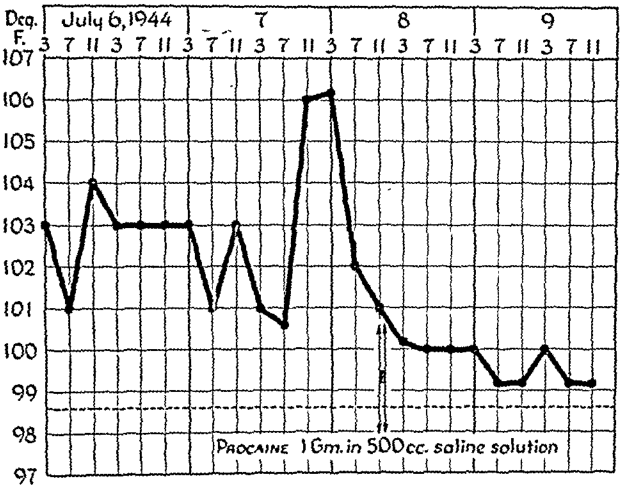

Chart 1 (case 2).—Effect of procaine on fever associated with delayed serum sickness following injection of bovine albumin.

CASE 3.—N. R., a white woman aged 61 with a roentgen ray burn of the sacrum, received 25 Gm. of bovine albumin solution ACB₁₁ on July 29, 1944 without immediate reactions. On August 4 she developed generalized urticaria, itching and a temperature of 102 F. On August 5 the temperature had returned to normal but the urticaria and intense itching persisted. On August 8 she received 1 Gm. of procaine in 500 cc. of saline solution intravenously in approximately three hours, with complete and permanent relief of the rash and itching attending the completion of the administration of the procaine solution.

CASE 4.—A. A., a white man aged 70 with carcinoma of the scalp, received 25 Gm. of bovine albumin solution ACB₃₇ on July 12, 1944 without immediate reactions. On August 5 he developed petechiae about the ankles but no other manifestations of delayed serum sickness such as arthralgia, myalgia, or adenopathy. The temperature of 102 F. could well be explained on the basis of infection beneath the skin grafts on the scalp. On August 9 he was given 1 Gm. of procaine in 500 cc. of saline solution without effect on the rash or fever. Precipitin tests on the patient's serum by Dr. C. A. Janeway at Boston, however, indicated that the patient had delayed serum sickness.

CASE 5.—M. T., a white girl aged 18 years with residual empyema following lobectomy for bronchiectasis, received 25 Gm. of bovine albumin solution ACB₁₁ on Aug. 3, 1944 without immediate reactions. On August 15 she developed myalgia, arthralgia, chills and fever up to 102 F. The serum sickness lasted approximately two weeks. On August 23 she received 1 Gm. of procaine in 500 cc. of saline solution intravenously with temporary relief of the pain in the joints, but subsequent injections of similar amounts of procaine on the 24th and 25th were without effect.

CASE 6.—H. O., a white man aged 33 with healing second and third degree burns of the face, received 25 Gm. of bovine albumin solution ACB₁₁ on Oct. 18, 1944 without immediate reactions. On November 6 he developed sore throat, arthralgia, nausea, vomiting and diffuse urticaria with itching. His daily temperature ranged up to 102 F. On November 10 he was given 1 Gm. of procaine in 500 cc. of saline solution intravenously, with subsidence of all signs and symptoms of delayed serum sickness.

CASE 7.—E. L., a white woman aged 44 with chronic cholecystitis, received 25 Gm. of bovine albumin solution ACB₁₁ intravenously on Dec. 22, 1944 without immediate reactions. On Jan. 9, 1945 she developed myalgia, arthralgia, general malaise, anorexia and a purpuric rash over both tibial regions. She was given 1 Gm. of procaine in 500 cc. of saline solution intravenously on January 17 and 18 with only partial and temporary relief of symptoms.

CASE 8.—P. M., a white woman aged 20 with acute appendicitis, received 25 Gm. of bovine albumin ACB₁₁ on Jan. 2, 1945 without immediate reactions. On January 17 she developed anorexia, joint pains and fever ranging up to 101 F. She was given 1 Gm. of procaine in 500 cc. of saline solution on the 19th and again on the 20th with temporary relief of joint pains for several hours after each injection. The anorexia and fever, however, were not influenced by the procaine.

CASE 9.—A. B., a white woman aged 64, who had sustained a supracondylar fracture of the left femur, received 25 Gm. of bovine albumin solution ACB₁₁ on Dec. 23, 1944 without immediate reactions. On Jan. 13, 1945 she developed myalgia, arthralgia and fever ranging up to 101 F. She was given 1 Gm. of procaine in 500 cc. of saline solution on the 14th, with complete relief of symptoms.

CASE 10.—J. A., a white man aged 51 with squamous cell carcinoma of the left foot, received 25 Gm. of bovine albumin solution ACB₁₁ on Jan. 10, 1945 without immediate reactions. On January 30 he developed pain and swelling of the wrists, shoulders, knees and ankles. A generalized urticaria and petechial rash also appeared. He received 1 Gm. of procaine in 500 cc. of saline solution, with prompt but temporary relief of the arthralgia. A second injection of procaine was given on January 31 with complete disappearance of joint pains and swelling. The rash, however, persisted for three more days and disappeared spontaneously.

CASE 11.—J. C., a white woman aged 49 with carcinoma of the right breast, received 25 Gm. of bovine albumin solution ACB₁₁ on Jan. 29, 1945 without immediate reactions. On February 14 she complained of generalized joint and muscle pains accompanied by swelling of the right wrist and elbow. She was given 1 Gm. of procaine in 500 cc. of saline solution, with prompt and complete relief of symptoms.

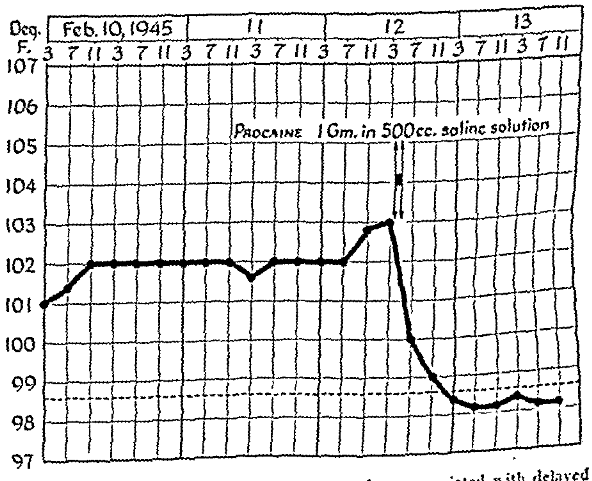

Chart 2 (case 13).—Effect of procaine on fever associated with delayed serum sickness following injection of bovine albumin.

CASE 12.—A. V., a white woman aged 46, who had sustained a simple fracture of the right tibia and fibula, received an injection of 25 Gm. of bovine albumin solution ACB₁₁ without immediate reactions. On February 20 she developed generalized myalgia and arthralgia, and her temperature rose to 102 F. These signs and symptoms persisted for three days, and then

1 Gm. of procaine in 500 cc. of saline solution was given intravenously, with gratifying relief of myalgia and arthralgia at the completion of the procaine injection. Her temperature also subsided from 101.8 F. prior to the injection to 99.8 F. at the termination of its administration.

Case 13.—O. W., a white man aged 59 with postoperative strangulated hernia, on Feb. 5, 1945 received 25 Gm. of bovine albumin solution ACB$_{61}$ without immediate reactions. On February 10 he developed generalized joint pains, myalgia and fever ranging up to 102 F. He was given 1 Gm. of procaine in 500 cc. of saline solution intravenously, with complete subsidence of signs and symptoms (chart 2).

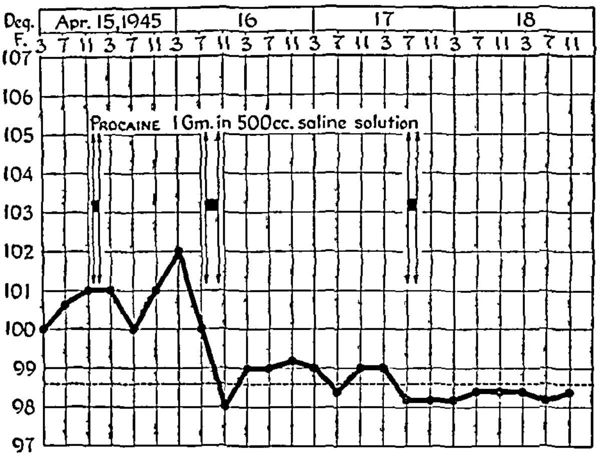

Chart 3 (case 15).—Effect of procaine on fever associated with delayed serum sickness following injection of bovine albumin.

Case 14.—J. B., a white man aged 68 with Buerger's disease of the lower extremities, received 25 Gm. of bovine albumin solution AMB$_{2}$ on Feb. 9, 1945 without immediate reactions. On March 8 he was readmitted to the hospital complaining of generalized myalgia, arthralgia, generalized petechial rash and fever ranging up to 102.2 F. He received 1 Gm. of procaine in 500 cc. of saline solution intravenously on the 9th and again on the 10th with temporary relief of symptoms for several hours following each injection. After a third injection on the 11th he had no further recurrence of symptoms.

Case 15.—A. M., a white man aged 59 with melanoma of the right heel, received an injection of 25 Gm. of bovine albumin solution AMB$_{1}$ on March 23, 1945 without immediate reactions. On April 15 he developed generalized muscle pain and painful swelling of the wrists, elbows and shoulders. He received 1 Gm. of procaine in 500 cc. of saline solution on the 15th, with considerable relief from the myalgia and arthralgia. His temperature, however, remained elevated up to 102 F. The relief from joint and muscle pain was only temporary, and a second injection of procaine was given on the 16th, with temporary relief of joint and muscle pains and a fall of temperature from 102 F. to 98 F. Following a third injection of procaine on April 17 there was no further return of the myalgia and arthralgia, and the temperature remained within normal limits (chart 3).

Case 16.—V. B., a white woman aged 40 with carcinoma of the colon, had developed delayed serum sickness following the injection of bovine albumin solution on two previous occasions (on July 26, 1943, nineteen days following the injection of bovine albumin solution ACB$_{29}$ and on April 30, 1944, five days after the injection of bovine albumin solution ACB$_{33}$). On Aug. 8, 1944 she developed an anaphylactoid immediate reaction of moderate severity after receiving 2.5 Gm. of bovine albumin solution ACB$_{41}$. This was treated successfully by the intravenous injection of procaine. She developed serum sickness a third time nineteen days after the injection of bovine albumin solution ACB$_{41}$, but on this occasion it was milder than on the previous occasions, consisting of urticaria alone. Intravenous procaine on August 21 afforded complete relief from the wheals and itching.

IMMEDIATE ANAPHYLACTOID REACTION FOLLOWING THE INJECTION OF BOVINE ALBUMIN

One patient who developed an anaphylactoid reaction during the injection of bovine albumin solution was treated by means of intravenous procaine with satisfactory results. Because the procaine solution must be dripped slowly, it was one hour after the onset of symptoms before relief was obtained. Obviously in the more severe type of immediate anaphylactoid reactions this response is not sufficiently rapid. For these, epinephrine still remains the drug of choice.

Interestingly enough, this patient developed delayed serum sickness nineteen days after injection, but on this occasion it was definitely much less severe than on previous occasions.

IMMEDIATE REACTIONS ATTENDING INTRAVENOUS INJECTION OF BOVINE ALBUMIN

V. B., a white woman aged 40 with carcinoma of the colon, had developed delayed moderately severe serum sickness following the injection of bovine albumin solution on two previous occasions (on July 26, 1943, nineteen days following the injection of bovine albumin solution ACB$_{29}$, and on April 30, 1944, five days after the injection of bovine albumin solution ACB$_{33}$). On this occasion, on Aug. 8, 1944, she developed an immediate reaction consisting of dyspnea, generalized urticaria and itching after receiving 2.5 Gm. of bovine albumin solution ACB$_{41}$. She was then given 1 Gm. of procaine in 500 cc. of saline solution intravenously in two hours, with relief of symptoms within one hour after the procaine solution had been started. The patient again developed delayed serum sickness nineteen days after the injection of the bovine albumin solution ACB$_{41}$, but on this occasion it was milder than on previous occasions, consisting of urticaria alone, and this subsided promptly and completely after 1 Gm. of procaine was given intravenously on August 21.

SERUM SICKNESS FOLLOWING THE INJECTION OF ANTITETANUS SERUM

Because of the elective nature of the surgical problems at the University Hospital, few acute emergency cases necessitating employment of antiserums have been available to us for study. The 1 patient whose clinical story is described in detail had a very gratifying result following the intravenous injection of cocaine, after the usual therapeutic agents had been used without benefit:

Case Summary.—T. B., a white woman aged 22, a nurse, had received 1,500 units of antitetanus serum five days prior to admission on June 1, 1945 for a contaminated laceration of the hand. She presented herself with the typical signs and symptoms of serum sickness, i. e. urticaria, itching, painful adenopathy, myalgia and arthralgia. She was given 5 minims (0.3 cc.) of 1:1,000 epinephrine hydrochloride every six hours for three days without relief. The patient at this time developed difficulty in breathing and swallowing, as well as edema of the eyelids, compelling hospitalization. In addition to epinephrine she was given codeine, amytal and ephedrine in repeated doses, without relief. On June 2, 1945 she received 1 Gm. of procaine in 500 cc. of saline solution intravenously over a two hour period, with considerable improvement of all signs and symptoms immediately. After the solution had run in, some joint and muscle pains persisted, but the difficulty in swallowing and breathing had disappeared almost completely. The following day she was given 1 Gm. of procaine intravenously again, with complete subsidence of all signs and symptoms. She was checked again three weeks later and had had no recurrence of serum sickness.

URTICARIA

Two cases of urticaria caused by known sensitizing agents both responded satisfactorily to intravenous procaine. In 1 patient, who had repeated attacks, an attempt to provide prophylaxis by daily injections of procaine resulted in lengthening of the period between attacks. There was no apparent decrease in the effectiveness of procaine on repeated injections.

Urticaria of Specific Etiology.—H. M., a white woman aged 32 who had recurrent bouts of generalized urticaria of three months' duration, was shown by skin tests to be sensitive to shellfish, eggs, hops, figs, mulberry and kapok. On August 8, 1944 she presented herself with generalized urticaria, for which she received 1 Gm. of procaine in 500 cc. of saline solution intravenously in about two hours, with subsidence of the itch while the solution was being given and disappearance of the wheals within two hours after the solution had run in. She was well until August 15, when she developed generalized urticaria once more and which again responded to procaine therapy. In an attempt to evaluate procaine as a prophylaxis against further attacks, she was given the drug on the 16th and the 17th and she had no further attacks of urticaria until September 11, when she developed urticaria and angioneurotic edema involving the face and arms. Procaine on this occasion also afforded prompt relief. The patient failed to return to the clinic for further check, and her subsequent clinical course could not be determined.

M. C., a white woman aged 48, who developed generalized urticaria and itching following the ingestion of tomatoes on Aug. 22, 1944, on that date was given 1 Gm. of procaine in 500 cc. of saline solution intravenously, with prompt disappearance of the itching and wheals.

Urticarias of Nonspecific Origin.—Of the 5 patients with urticaria due to an unknown sensitizing agent, 4 obtained temporary relief and 1 was not benefited at all. One patient (J. W.), who had particularly severe urticaria, for which the usual therapeutic agents had been given without relief, responded rather dramatically to the intravenous injection of procaine, and repeated injections appeared to afford the patient longer periods of relief. Subsequent to a third injection of procaine he had no further urticaria for a period of a month during which time it was possible to observe him.

Urticarias of Nonspecific Etiology.—D. S., a white woman aged 22, had recurrent bouts of urticaria for six years. Skin tests failed to reveal any specific sensitizing agent. She was given 1 Gm. of procaine intravenously on Aug. 21, 22 and 23, 1944 with temporary relief from the urticaria of approximately two hours' duration on each occasion.

O. C., a white man aged 34, had recurrent bouts of urticaria and itching at variable intervals for twelve years. Skin tests failed to reveal any specific sensitizing agent. On this occasion he received 1 Gm. of procaine intravenously on Aug. 22, 1944 with prompt relief of itching and wheals. Subsequent check revealed that the patient continued to have recurrent attacks of urticaria with the same frequency and severity as before the procaine injection.

B. D., a white man aged 36, who had recurrent bouts of urticaria and dermatographia of three years' duration, was given 1 grain (0.06 Gm.) of procaine in 500 cc. of saline solution intravenously on Sept. 20, 21 and 22, 1944 with relief of symptoms for several hours only after completion of each injection.

M. M., a white woman aged 30, had recurrent attacks of urticaria of five years' duration. Skin tests failed to reveal any specific sensitizing agent. She was given 1 Gm. of procaine in 500 cc. of saline solution intravenously on Sept. 15 and 16, 1944, without relief of symptoms.

J. W., a white man aged 62, with Hodgkin's disease, developed generalized urticaria of a severe degree on Aug. 5, 1944 for the first time. The offending sensitizing agent could not be determined. The usual therapeutic agents, such as epinephrine in oil, calcium gluconate and calamine lotion, failed to give the patient any relief. On Aug. 8, 1944 he received 1 Gm. of procaine in 500 cc. of saline solution, which resulted in complete subsidence of the urticaria and itching for twelve hours. He was given procaine again on the 9th, when the urticaria reappeared and again it caused the wheals and itching to disappear. On this occasion he had no further difficulty for two days. On the 11th he was given procaine again and the urticaria disappeared once more. Subsequent check one month later revealed that the patient had had no further attacks of urticaria.

MISCELLANEOUS CASES

One patient with chronic asthma and 1 with rheumatoid arthritis were given procaine intravenously without benefit. A third patient with status anginosus was much improved following injection of procaine.

Chronic Asthma.—B. C., a white woman aged 60 with repeated bouts of asthma for twenty years, was admitted during a moderately severe attack and given procaine intravenously on three consecutive days without relief.

Rheumatoid Arthritis.—F. C., a white man aged 52 who had chronic rheumatoid arthritis of fifteen years' duration with considerable deformity and pain, was given an injection of 1 Gm. of procaine in 500 cc. of saline solution on Aug. 22, 1944, which afforded the patient no relief.

Status Anginosus.—E. E., a white woman aged 79, had severe repeated attacks of angina pectoris for a period of one year. Following the intravenous injection of procaine she was completely free from attacks for a period of approximately three weeks.

COMMENT

The lack of knowledge of the fundamental causes of anaphylaxis and serum sickness makes any attempt at explanation of the mode of action of procaine in combating their manifestations merely conjectural.

The most widely accepted hypothesis[12] postulates that anaphylaxis and serum sickness are basically different manifestations of the same process, namely an antigen antibody reaction occurring on or in the body cells that have removed the antibody from the blood and in some way fixed it to themselves. This interaction results in cellular injury, with the liberation of toxic protein split products or possibly, as suggested by Dale and his colleagues, histamine or histamine-like substances. It is well known that the injection of histamine in guinea pigs produces a picture similar to but not identical with anaphylactic shock. As well as acting directly on tissue cells, these liberated substances may act on the vascular system both by direct injury to the capillaries or through stimulation of the nerve fibers to the terminal arterioles.

The action of procaine may be explained in a number of ways:

(*a*) Direct action on cells. Certainly the relief of myalgia and arthralgia can best be explained by the anesthetizing action of procaine on the nerve fiber carrying pain stimuli from the muscle and joints.

Leriche[6] postulated a direct action of procaine on the endothelium of the arterioles and capillaries with widespread vasodilatation. We have checked the skin temperatures of the lower extremities in 4 persons without peripheral vascular disease and have found definite evidences of vasodilatation in each instance as evidenced by the increase in skin temperature of the lower extremities following the intravenous administration of procaine.

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[12] Zinsser, Hans, and Bayne-Jones, Stanhope: A Textbook of Bacteriology, ed. 8, New York and London, D. Appleton-Century Company, 1939, pp. 221-229.

(*b*) Anti-histamine action. Few data are available on this point. In dogs procaine is unable to inhibit the stimulus to gastric juice secretion of histamine.[13]

(*c*) Anti-acetylcholine action of procaine, as already stated. Harvey[9] and his co-workers have shown that procaine not only depresses the response of the synapses of the sympathetic ganglions as well as terminal efferent nerve fibers to acetylcholine but also decreases the amount of acetylcholine liberated at these sites. Some of the manifestations of serum sickness, particularly the spreading flare about the wheals, are probably due to the liberation of acetylcholine at the nerve fiber endings at the terminal arterioles; and their disappearance after the injection of procaine might logically be explained on this anti-acetylcholine action.

(*d*) Epinephrine potentiating action of procaine. Although the amounts of epinephrine secreted in the body may not in themselves be sufficient to combat the manifestations of serum sickness, still the potentiation by procaine may be of sufficient degree to accelerate the rate of disappearance of these manifestations.

It is indeed noteworthy that our findings attesting the value of procaine in the treatment of serum sickness are contrary to those of Breton and Gedoux,[8] with whose work we were unfamiliar until the literature of the subject was reviewed in the preparation of this paper for publication. The explanation for this discrepancy possibly is to be accounted for in the differences of dosages of the drug used: they gave only 1 mg. per 10 Kg., i. e. 7 mg. for a 70 Kg. person, whereas our patients received 0.9 to 1 Gm. over a two hour interval.

SUMMARY AND CONCLUSIONS

One Gm. of procaine diluted with 500 cc. of saline solution administered over a two hour period has been given to 27 patients without untoward reactions.

Ten of the 16 patients with serum sickness following the injection of bovine albumin obtained complete relief and an additional 4 temporary relief after the intravenous administration of procaine. Two were not benefited.

The rather striking relief noted in the case of serum sickness following the use of tetanus antitoxin suggests that procaine may prove extremely useful in the management of serum sickness attending the use of tetanus antitoxin.

Six of 7 patients obtained relief from urticaria and other manifestations of hypersensitiveness whether the sensitizing agents were known or not. No patient, however, was cured of the sensitivity state.

Procaine must be administered at too slow a rate to make its use feasible in severe immediate anaphylactoid reactions. Epinephrine remains the drug of choice in such circumstances.

One patient with chronic asthma and another with chronic deforming rheumatoid arthritis were not benefited by repeated procaine injections.

The elevation of skin temperatures of the lower extremities in 4 patients and the excellent response of 1 patient with status anginosus following the intravenous injection of procaine would suggest the possible use of procaine in conditions associated with vasospasm or Raynaud's disease, Buerger's disease, arteriosclerosis with superimposed vasospasm angina pectoris and thrombophlebitis.

The exact mode of action of procaine in the treatment of serum sickness and sensitive states is not known.

HEALTH OF REPATRIATED PRISONERS OF WAR FROM THE FAR EAST

BRIGADIER GENERAL HUGH J. MORGAN
United States Army
COLONEL IRVING S. WRIGHT
Medical Corps, Army of the United States
and
LIEUTENANT COLONEL ARIE von RAVENSWAAY
Medical Corps, Army of the United States

On the completion of hostilities with Japan it was inevitable that a large number of allied prisoners of war would be released from Japanese prison camps. Approximately one third of these were American. The period of captivity had ranged from three and one-half years to a few days. The conditions under which most of them had lived were those of starvation, filth and lack of suitable clothing, with periods of definite torture. Thousands died as a result of these hardships. It was believed that a careful health survey of those who survived might be of value in helping to determine the best future care for them, the possibility of the prevention of the spread of communicable conditions in their families and communities, and a better understanding of the changes which take place in man after exposure to such living conditions. To achieve these objectives a board was established by the Surgeon General for the purpose of conducting such a survey. The personnel consisted of Brig. Gen. Hugh J. Morgan, U. S. Army, president; Brig. Gen. Rex McK. McDowell, U. S. Army; Brig. Gen. William C. Menninger, U. S. Army; Col. Walter A. Carlson, M. C.; Col. William P. Holbrook, M. C.; Lieut. Col. James T. McGibony, M. C.; Major Gustave J. Dammin, M. C., and Capt. John S. Hunt, M. C.

Col. Irving S. Wright, M. C., was appointed as coordinator for this survey, and Lieut. Col. Arie C. van Ravenswaay, M. C., was appointed assistant coordinator representing the Air Surgeon. Teams of specialists[1] were assigned to three debarkation hospitals on the West Coast, namely Madigan General Hospital, Letterman General Hospital and Camp Haan Debarkation Hospital, and to Halloran General Hospital on the East Coast. Teams were set up at Hamilton Field Debarkation Hospital and at Fairfield-Suisun Station Hospital, which were later consolidated with the team at Letterman General Hospital. A survey team was also established at Mitchel Field A. A. F. Regional Hospital.

A total of 4,618 patients were surveyed. Of these, 3,204 were surveyed at Letterman General Hospital, 886 at Madigan General Hospital and the remainder at the hospitals on the East Coast. No patients were surveyed at Camp Haan Debarkation Hospital. The team from that hospital was used to aid in the survey at Madigan General Hospital.

The survey began on Sept. 1, 1945 and was terminated Oct. 22, 1945.

STATISTICAL ANALYSIS OF SURVEY RECORDS

The findings resulting from the study of these patients were entered on master forms. They were later transferred to punch cards and subjected to machine statistical analysis. The significant findings with their broader connotations are herewith presented:

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[13] Baronofsky, I.: Personal communication to the authors.

[1] Specialists in internal medicine, neuropsychiatry, dentistry and clinical pathology were assigned, as were technicians These teams supplemented the staffs of the general hospitals in which the survey was made.

1. *Nutrition.*—The nutritional state of the released prisoners was of first importance. It was at first thought that a study of the weights, at the time of capture, the time of release and the time of the survey would give fairly accurate information in this regard. Such figures, while of interest, do not reveal the whole picture of what took place with these men for the following reasons:

(*a*) The weight at the time of capture frequently did not reveal the normal weight. Many of the troops captured in the Philippines had been on starvation diets and had suffered from dysentery and malaria for many weeks before capture. Some had lost 30 to 50 pounds before capture.

(*b*) The weight at time of release did not represent the lowest weight. Many of the prisoners reached their lowest weights within the first six months of imprisonment, while they were still in the Philippines or Formosa. When they were moved to Manchuria, many improved in nutrition after they received more soy bean flour. During the last month before release, many gained weight as a result of food supplies dropped in the prison camps by bombers from the United States Army Air Forces.

TABLE 1.—*Correlation of Weights, Heights and Age Groups Among Repatriated American Prisoners of War*

Age Group	Height Range, Inches	Number	Average Weight, Pounds			Extreme Loss in Group, Capture to Release, Pounds
			Capture	Release	Time Survey	
19	66 - 72	15	154	118	148	174 to 100
20 - 24	59 - 79	1,080	154	132	156	252 to 200
25 - 29	59 - 82	2,331	154	132	157	185 to 114
30 - 34	53 - 78	665	153	131	156	158 to 110
35 - 39	60 - 75	250	156	133	157	134 to 84
40 - 44	64 - 76	85	156	130	154	200 to 139
45 - 49	63 - 74	33	163	134	152	180 to 133
50 - 63	59 - 75	87	158	135	147	220 to 143

(*c*) The weight at the time of the survey was subject to a varying interpretation, depending on the length of time between the release of the prisoner and his examination. The first prisoners were flown across the Pacific and represented more nearly the picture at the time of release. Later groups had been receiving American food and care for more than a month before reaching the survey line. It should be noted that the weight at the time of the survey frequently exceeded that recorded at the time of capture for reasons explained under paragraph *a*. With these qualifications the general trend of the weights charted against the heights and age groups is herewith presented in table 1.

A very few prisoners actually gained weight between capture and release. There were two explanations for this phenomenon: Either they were very ill at the time of capture and recovered or they were cooks or mess attendants and, hence, in a position to purloin food more easily than their fellow prisoners. The very narrow ranges of the average weights at the time of capture, release and survey are noteworthy.

While the total weight of many of these patients at the time of the survey was equal to their former normal weight, examination with particular attention to their shoulder girdles and extremities indicated that their nutritional state as evidenced by muscular development was far below normal. The newly gained weight in these persons was largely confined to their protuberant abdomens, or so-called "rice bellies."

It was obvious that the deficiencies from which these patients suffered were multiple. Therefore any attempt to classify the findings in the light of specific vitamin, protein or mineral deficiencies is fraught with definite hazards of misinterpretation or overinterpretation. It is considered wise, therefore, to be content with a listing of the lesions which may have been due to deficiency diets with their incidence in 4,618 prisoners surveyed (table 2).

Additional correlation of the neurologic status as indicated by the relation between type of disease and incidence of physical findings is to be found in table 3.

TABLE 2.—*Lesions Associated with Dietary Deficiency in 4,618 Repatriated American Prisoners of War*

Incidence	Number
I. Eye Lesions	
a. Conjunctival changes	231
b. Corneal changes	42
c. Scleral changes	20
d. Conjunctival and scleral changes (correlation)	4
e. Scleral and corneal changes (correlation)	1
II. Skin and Mouth Lesions	
a. Follicular hyperkeratosis	63
b. Scleral changes and follicular hyperkeratosis	1
c. Conjunctival changes and follicular hyperkeratosis	1
d. Petechial hemorrhages	4
e. Purpura	2
f. Petechial hemorrhages and purpura (correlation)	1
g. Gingivitis with bleeding (mouth)	37
h. Petechia with gingivitis with bleeding (correlation)	0
i. Purpura with gingivitis with bleeding (correlation)	0
j. Pellagrous dermatitis	49
k. Pellagrous glossitis	63
l. Pellagrous dermatitis and glossitis (correlation)	4
m. Atrophy of papillae of tongue	198
n. Pellagrous dermatitis with atrophy of papillae of tongue	17
o. Cheilosis	70
p. Angular	110
q. Cheilosis and angular fissures (correlation)	20
r. Cheilosis and atrophy of papillae of tongue (correlation)	30
s. Pellagrous glossitis and atrophy of papillae of tongue (correlation)	27
III. Edema and Cardiac Changes	
a. Edema (advanced and moderate)	465*
b. Large heart	25
c. Edema and large heart (correlation)	6
d. Cardiac murmurs present	71
e. Edema and murmurs (correlation)	9
IV. Neuromuscular Changes	
a. Weakness (neuromuscular)	56
b. Absent knee jerks	20
c. Weakness and absent knee jerks (correlation)	10
d. Muscular tenderness	20
e. Weakness and muscular tenderness (correlation)	21
f. Absent knee jerks and muscular tenderness (correlation)	3
g. Loss of vibratory sense in legs	27
h. Absent knee jerks and loss of vibratory sense in legs (correlation)	3
i. Muscle tenderness and loss of vibratory sense in legs (correlation)	6

* This figure represents only a small proportion of those men who at some time during their imprisonment had definite edema. Further reference to this problem will be found elsewhere in this report.

2. *Blood Pressure.*—The range of systolic and diastolic blood pressures was recorded and analyzed. No outstanding deviations from the normal expectancy were noted.

LABORATORY FINDINGS

1. *General Statement.*—The laboratory data obtained in this survey were undoubtedly modified to a considerable degree by several factors. Most of the men had been liberated from prisons several weeks prior to their examination in this country. During this time they had received varying degrees of medical care. All had been given high caloric, high vitamin diets. Some had received whole blood and plasma transfusions as well as liver extract and vitamins parenterally. Many received chemotherapy for various reasons, and on

some of the ships the use of vermifuges was widespread. As a result of these essential measures there was a decided improvement in the physical well being of these men, with a concomitant diminution of abnormal hematologic, parasitologic, chemical and bacteriologic findings. One of the findings of interest was the fact that, with the exception of stool parasite studies, the laboratory data obtained from the prisoners tended more and more to approach normal as the survey progressed.

2. *Stool Examinations for Parasites.*—Throughout the whole study the proportion of prisoners found to be harboring intestinal parasites was uniformly in the vicinity of 60 to 70 per cent, with many yielding from two to six different species of parasites (table 4). It is believed that this represents a very conservative figure, since (*a*) many had received vermifuge treatment and (*b*) only a single stool specimen was examined rather than the usual series of three or more stool examinations.

It was found that these men were heavily seeded with ascaris and hookworm. On the other hand it should be noted that Endameba histolytica was found in approximately 7 per cent, a figure not significantly different from that expected in the population of certain areas of the United States. No carriers of Schistosoma japonicum in this series presented any physical signs of schistosomiasis.

Table 3.—*Further Correlation of the Neurologic Status (4,618 Repatriated American Prisoners of War)*

	Total	X	0	1	2	3	4	5	6	7	8	9
Neurologic Status	Number of Men	No Report	Reported as None	Muscle Weakness Due to Nervous System Involvement	Muscle and/or Nerve Tenderness	Muscle Atrophy	Diminished Tendon Reflexes	Impairment of Sensation	Disturbances of Gait	Impaired Pupillary Reactions	Ocular Palsies	Optic Atrophy
X. No reports given	73	70	1	..	..	..	1	2	..	..	..	..
0. R	25	..	24	1	..	..	..	..	..	..	..	..
1. N	3,849	954	2,884	6	..	..	3	..	1	2	..	..
2. P	568	3	4	23	36	5	184	409	2	13	..	42
3. P	29	..	..	13	9	4	16	22	13	..	..	4
4. Degenerative disease of the central nervous system	23	..	..	4	1	..	4	7	4	..	2	16
5. Infectious diseases of central nervous system (other than 6 or 7)	5	..	..	1	..	..	..	3	2	..	1	1
6.	2	..	..	..	..	..	..	1	..	..	1	..
7.	1	..	..	1	..	1	..	..	..	..	..	..
8. ment	10	..	2	8	1	1	..	4	1	..	1	1
9. Traumatic peripheral nerve involvement	33	..	..	7	..	2	3	30	3	..	..	..
Total (including no report)	4,618	1,027	2,915	59	47	13	211	478	26	15	5	64

3. *Stool Cultures for Enteric Pathogens.*—It was noted that the incidence of Shigella and Salmonella carriers tended to decrease as the survey progressed. Most carriers harboring these enteric pathogens tend to lose their micro-organisms within a period of one or two months after infection. The total number of carriers of Shigella organisms was 80. The total number of carriers of Salmonella organisms was 108. All species of Shigella isolated are commonly found in the United States.

4. *Hematologic Examinations.* — The hematologic examinations carried on in this survey were divided into routine examinations including the determination of hemoglobin and the eosinophil percentage. The range of these two findings is given in table 4.

A study was made on the blood film for malarial plasmodia and filariae. The yield was extremely low for these parasites. Only five smears showed vivax, one showed falciparum and none showed filariae. Careful histories revealed, however, that 2,519 men believed that they had had malaria sometime during their imprisonment. Since most of these men had received little or no antimalarial therapy during their imprisonment, this adds considerable evidence to the belief that malaria will "burn itself out" without treatment over a period of from a few months to several years.

A detailed study was carried out on 75 anemic patients to determine the types of anemia found and the relation of such anemias to the nutritional state of the patient. This study was carried out by 1st Lieut. George E. Cartwright, M. C. These men had been on a grossly inadequate diet consisting mainly of rice for an average of forty months. The average loss of weight was 37 pounds (17 Kg.). A history of nutritional deficiency as characterized by cheilosis, glossitis, stomatitis, dermatitis and diarrhea was obtained in 50 to 70 per cent. A history suggesting wet beriberi was obtained in 77 per cent, and a history of dry beriberi was obtained in about 50 per cent. Anemia was observed in 52 per cent of the first 1,500 released prisoners surveyed. The incidence of anemia diminished as successive groups were examined, the obvious explanation being an increase in the length of time after release from the prison camps. Six weeks after the study was commenced anemia was found in only 35 per cent. Anemia as present in this group was macrocytic in 73 per cent, normocytic in 23 per cent and microcytic in 4 per cent. Differential counts were not remarkable except for frequent occurrence of an eosinophilia. Blood smears showed numerous macrocytes, anisocytosis, polychromatophilia and occasional nucleated red cells. Approximately half of the men studied had normal serum iron and copper values. The other half were characterized by hypoferremia and hypercupremia. The etiologic factors concerned in the production of these anemias were complex. They included severe nutritional deficiencies, intestinal parasitic infestations and other causes, including dysentery, malaria, blood loss and infections.

5. *Plasma Protein Levels.*—Plasma protein levels were studied in the first 1,190 patients received at Letterman General Hospital. Only 2 showed values outside of the range of 6.0 and 8.4 Gm. per hundred cubic centimeters. This study was therefore discontinued.

6. *Urinary Specimens.*—Urinary specimens from 3,400 patients were studied. The frequency of urinary

tract disease did not differ much from that expected in other male groups of comparable age distribution.

7. Calcium and Phosphorus Blood Levels.—Determinations of the blood levels of calcium and phosphorus were carried out on 35 patients. These revealed no abnormalities.

CLINICAL IMPRESSIONS

It is clear that some of the most significant changes do not lend themselves to compilation on master forms and analysis by machine record devices. A summary of these general clinical impressions therefore will be given. Most of these patients were quite cheerful and cooperative; there was evidence of a detachment from reality; absentmindedness was a common finding in the first groups which returned, but as later groups were analyzed a remarkable trend toward normalcy was noted.

A question which constantly recurred among the examiners was why this particular group survived. It was felt that in a sense this was a select group. Many factors doubtless played a part in survival. The factor of chance was important, since any man might have been on a torpedoed Japanese prison ship or slain in a fit of temper by some Japanese soldier. A large percentage of these men had volunteered for military service prior to the onset of the war. These were seasoned soldiers—adjusted to being away from home and schooled in taking care of themselves under adverse conditions. When the prisoners were asked for their opinions in this regard many of them stated that their confrères who had died when the going was difficult had in many instances "lacked the will to live." The "will to live" is an intangible phrase. It is difficult to define, but the men who did not give up were characterized by some of the following qualifications.

TABLE 4.—*Range of Hemoglobin and Eosinophils*

Hemoglobin, Gm	Number of Cases	Per Cent of Total
Less than 8.0	1	....
8.0 to 9.9	9	0.3
10.0 to 11.9	163	5.0
12.0 to 13.9	1,146	35.8
14.0 to 15.9	1,598	50.0
16.0 or over	286	8.9
	3,203	

Eosinophils, per Cent	Number of Cases	Per Cent of Total
Less than 5	1,653	51.6
5 to 9	885	27.6
10 to 19	538	16.8
20 to 29	93	2.9
30 or over	34	0.7
	3,203	

TABLE 5.—*Results of Laboratory Examinations*

I. Parasites in the stools (3,608 examined)	
a. No parasites	1,372
b. Amebas	348
c. Ascaris	1,098
d. Hookworm	500
e. Pinworm	0
f. Tapeworm	3
g. Others	1,144
h. Amebas with ascaris (correlation)	83

1. They had a never failing hope of rescue.
2. They were possessed of a high morale and courage.
3. They were individuals who adjusted rather easily to difficult situations.
4. They were *nonaggressive* or at least were able to control a tendency to pugnaciousness which, if allowed to evidence itself, frequently resulted in summary death.
5. They were willing to eat anything, however disagreeable, *if it might contain nutritional value.*
6. They were willing to secure food by any and all means. The stealing of food from the Japs became a highly specialized *technic. In one camp at the time of release* the prisoners had more than 2,000 pounds of beans hidden away in diverse places.

Almost without exception, these patients had suffered from diarrhea at some time during their imprisonment. It was necessary to distinguish between diarrhea which *most persons have from time to time in normal life* and true dysentery consisting of prolonged periods of watery or bloody stools. Thirteen hundred and fifty-nine of the prisoners did have one or more attacks *of diarrhea presumed to be true dysentery.*

Wet and dry beriberi occurred with great frequency. Most of the prisoners developed wet beriberi first, followed by dry beriberi. The dry beriberi was characterized in some patients by extremely severe pains or sensitivity. For example, 1 patient who was able to endure Japanese torture methods with fortitude had become so sensitive as a result of beriberi that when another patient passed by the foot of his bed the jarring of the rather unsteady flooring caused him to cry out in pain.

Beriberi heart was encountered but in a high *percentage of victims resulted in death in the prison camps.* Exact statistics regarding this are not available.

A most interesting observation was encountered in many prisoners, namely the development of widespread edema, *particularly involving the lower extremities,* which came on promptly after the receipt of American food. The explanation for this is not clear, but the *following factors suggest themselves: In some instances this edema developed after a generous diet of American* food which included more salt and fluid than the prisoners had been accustomed to. In these instances it was *believed that the salt influenced the retention of fluid* with the development of edema. In other patients, however, this edema arose before they had received a well balanced American diet. These men had received large *amounts of candy, which they craved. One, for example,* had obtained a box of chocolate bars which was dropped near him in a prison camp. He ate more than forty bars of chocolate during the first day. He promptly *became desperately ill with vomiting and diarrhea and* within a few days developed a well defined edema for the first time since being captured. Either the increased demand of carbohydrate metabolism for thiamine and perhaps other members of the vitamin B complex or the loss due to the vomiting and diarrhea *may* have been a severe enough drain on the *depleted* supplies *stored in the patient's body to produce* an acute state of wet beriberi.

Outbreaks of jaundice occurred in several Japanese prison camps. A moderately severe *outbreak occurred* at Cabanatuan in May, June and July of 1942. Other outbreaks occurred at Kawasaka, Moetsu and Omari. Characteristically *the disease resembled infectious hepatitis, with nausea, vomiting, malaise, fever* and jaundice. Only 15 liberated prisoners showed *evidence of* jaundice at the time of the survey. It is of interest that in practically all cases the disease was *limited to one* month or less and most of the patients were ambulatory. Many continued manual labor. Several explanations suggest themselves:

1. The etiologic agent *may not have been* as virulent as that encountered in the European theater.
2. The diet, though low in calories, vitamins and proteins, was limited practically entirely to carbohydrates. This may have constituted a favorable diet for persons with this disease.

Five hundred and five men reported having had pneumonia. One hundred and one out of 3,742 checked showed evidence of active pulmonary tuberculosis on x-ray examination. This is a high percentage of infection and indicates that exposure of these prisoners to tuberculosis must have occurred frequently.

Dermatologic observations were of interest. Not a single instance of lichenoid disease of the type now associated with atabrine therapy was found in this survey. Practically none of these patients had received any atabrine. Many had never heard of the drug. Pyogenic infections of the echthymatous type were frequent. Outbreaks of diphtheria, both skin and faucial, were common, and in certain camps deaths occurred from diphtheria. A scar not dissimilar from the scar of skin ulcers due to diphtheria was found to have been produced by the so-called "fire treatment" of Japanese doctors which was used not only on American prisoners but on their own troops. This consisted in applying a small pellet of sulfur to the skin and igniting it. An ulcer was produced which inevitably became infected. This form of treatment was applied in diverse parts of the body, depending on the disease being treated.

A curious combination of skin and mouth lesions was noted. Numerous patients gave a history of stomatitis associated with a dry scaly dermatitis of the scrotum. The incidence of this was believed to be greater than would be expected on a coincidental basis. The mouth lesions usually cleared up first after the patient received a well rounded diet.

The psychiatric findings were summarized as follows: The appearance of the patients varied with the length of time of their imprisonment and the length of time between their release and their examination. Those examined within ten days of their release appeared somewhat dazed, moderately euphoric and somewhat childlike in their reactions. Some of them were very apprehensive about returning to their homes and families, feeling that they might not be able to stand the strain of returned civilian life with its responsibilities. Those who had been released for a longer time tended to approximate the normal more closely. The men who had been in prison for long periods showed more definite psychologic changes than those who had been in prison a short time even though the treatment of the latter might have been harsher, as in the case of certain B-29 crews who had come down in Japan. In general, the personality structure represented a mixture of superficial feeling of well-being and a feeling of insecurity. A feeling of hostility toward the Japanese was almost universal. Food had been the one great motivating factor in their lives during starvation periods. They worked and lived for food alone, and their dreams were mostly of food. During periods of severe starvation there was a decided loss of sexual interest. Thoughts and dreams of women disappeared from their lives, even in many cases thoughts of those whom they really loved. Homosexuality became a negligible factor. The few examples of it were to be found among kitchen and hospital help who were able to receive slightly better nourishment. In other words, as the primitive desires were lost the desire for food was the last one to be held.

DENTAL SURVEY

A detailed study of the dental examination forms has not been completed at this time, but as far as this study has progressed no unusual pathologic conditions of the teeth were manifested. The number of carious teeth was less than that of the same age group living under normal conditions, which might be accounted for by the low amount of sugars in their dietary regimen. X-rays of the maxillas did not disclose any excessive bone destruction, and the bony pattern was considered normal.

COMMENT

The foregoing has been an abstract of the findings from a health survey of 4,618 repatriated American prisoners of war from the Far East,[2] with an analysis of the results of prolonged malnutrition and mistreatment and a discussion of the significance of these effects. Striking deviations from the normal include loss of weight, neurologic changes, a high incidence of pulmonary tuberculosis, muscular wasting, dermatologic mainfestations and psychologic changes. Significant laboratory findings include a high incidence of infestation with intestinal parasites, anemia, especially macrocytic, and eosinophilia.

THE FENESTRATION OPERATION FOR OTOSCLEROSIS

GEORGE E. SHAMBAUGH Jr., M.D.
Chicago

The fenestration operation for improving the hearing in otosclerosis rests on a very simple principle: the creation of a new window into the labyrinth to take the place of the oval window which has become occluded by the otosclerotic bone proliferation.

The history of the fenestration operation is the story of the search for a method of making a labyrinthine fistula that will remain open. The essentially international character of science is exemplified in this search. Passow in Germany in 1896 first made a new opening into the labyrinth in a case of otosclerosis, but the hearing improvement lasted only a few days. Jenkins in England, Bárány in Vienna and Holmgren in Sweden successively attacked the problem, but invariably the hearing improvement was of brief duration as new bone formation closed the labyrinthine fistula within a few weeks or months. Engstrom,[1] working with Holmgren in Sweden, carried out extensive experiments on the monkey, but with every technic that was tried the fistula always closed.

Sourdille[2] in France took up the problem between 1924 and 1937 and finally elaborated a complicated three or four stage operative technic with which for the first time a labyrinthine fistula was made that remained open in some cases for more than five years with a sustained hearing improvement. Sourdille's "tympanolabyrinthopexy" consisted essentially in making a new window into the horizontal semicircular canal and in covering this window with a plastic skin flap continuous with the tympanic membrane. The vibrations of the tympanic membrane in response to sound waves were thus transmitted directly to the fluid within the labyrinth. The principle of the Sourdille operation has continued to be the principle of the fenestration operation to the present day. Sourdille's procedure, however, failed to gain general acceptance because the several stages, each separated by months of convalescence, made the operation impracticable for the average patient. The electrical hearing aid and lip reading were still the only recourse for the approximately 1 per cent of all white adults that develop progressive deafness due to otosclerosis.

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[2] The complete report of these findings will be published in the Surgeon General's History of World War II.

Read before the National Cardiologic Institute of Mexico, Mexico City, Dec. 11, 1945.

[1] Engstrom, H.: Ueber das Vorkommen der Otosklerose, nebst Experimentalen über chirurgische Behandlung der Krankheit, Acta Oto-laryng., 1940, supp. 43.

[2] Sourdille, M.: The Present Position of the Surgical Treatment of Otosclerosis, J. Laryng. & Otol. 53:78, 1938.

Meanwhile the problem of the surgical restoration of hearing in otosclerosis was taken up in America by Lempert,[3] who published his first report in 1938. Lempert combined Sourdille's multiple stage procedure into a practical one stage operation which he named the fenestration operation. The critics predicted that the Lempert fenestration operation, like its predecessors, would fail as the result of bony closure of the labyrinthine fistula. This prediction was partially borne out, as many of the early patients operated on by Lempert, myself and others lost their hearing improvements in the course of the first postoperative year.

In January 1940 I reoperated on my first patient, who, first operated on in July 1938, had experienced a definite hearing improvement amounting to a gain of 19 decibels for the speech frequencies. Six weeks after operation, however, his hearing began to recede, soon reaching the original preoperative level (fig. 1). At reoperation, when the skin flap was elevated from the bony horizontal semicircular canal the polished bone surface appeared unchanged but the fistula was completely occluded by a plug of new bone. This plug was carefully removed, the skin flap was replaced and the patient experienced a very satisfactory hearing improvement amounting to a gain of 27 decibels for the speech frequencies. This hearing improvement has been maintained without loss for six years (fig. 2).

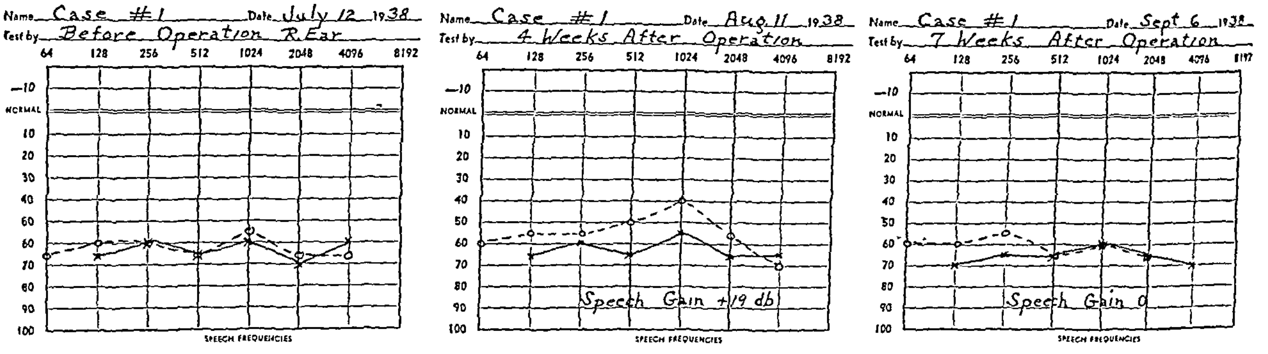

Fig. 1 (case 1).—Audiometric tests before and after fenestration operation: solid line, left ear; broken line, right operated ear.

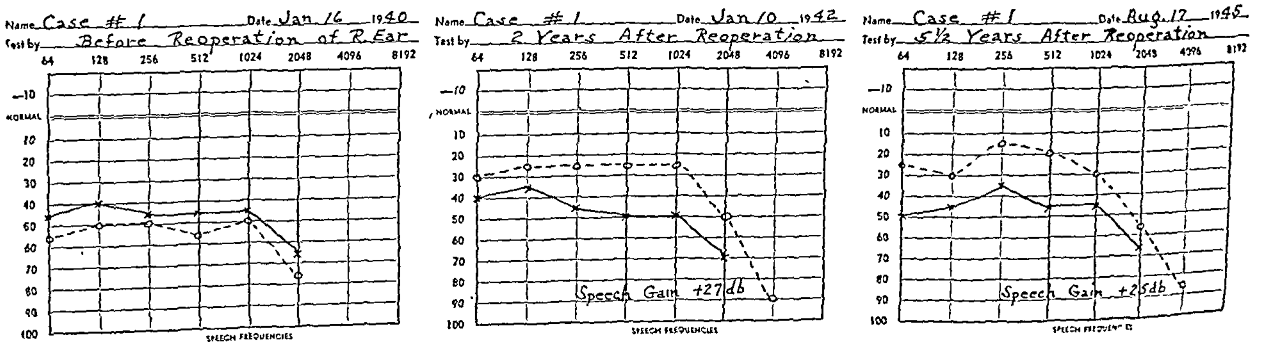

Fig. 2 (case 1).—Audiometric tests before and after reoperation.

The bony plug removed from the fistula in this first case had a coarsely granular appearance and consistency, suggesting that it had been formed from bone dust. Since with the technic then employed bone dust from the dental finishing burr inevitably collected in the perilymph space of the labyrinth, from which it could hardly be removed without damaging the extremely delicate membranous labyrinth, I devised a simple irrigating apparatus to maintain a constant flow of sterile isotonic solution of sodium chloride across the bone during the creation of the fistula. Not only did the irrigating apparatus prove effective in washing away every particle of bone dust but it kept the operative field immaculately clean and free from blood, so that for the first time I was able to see clearly the membranous labyrinth floating in the perilymph of the horizontal semicircular canal. The use of a binocular dissecting microscope to take advantage of the improved visibility so as to make a more perfect fistula logically followed. Immediately the results of the operation were greatly improved, so that in December 1941 I[4] was able to report 88 per cent of patients operated on enjoyed hearing improvements six months or longer after operation, a higher percentage than had been reported heretofore by any previous technic.

In 1941 Lempert[5] described the "fenestra nov-ovalis," in which the fistula is made anteriorly into the widened ampullated portion of the horizontal semicircular canal, permitting the creation of a larger fenestra. I have used the nov-ovalis operation combined with the constant irrigation and microscope technic[6] in 822 consecutive operations during the past four years.

These improvements in the fenestration operation have resulted in greater average hearing improvements in a larger percentage of cases. The reports that have been published, however, do not give sufficient data to permit one to reach any exact conclusions concerning the ultimate permanence of the hearing improvements after the fenestration operation. Either the reports of cases several years or more after operation are incomplete and include only a selected few of the better results, or the reports of a consecutive series of cases are too recent to be regarded as permanent.

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[3] Lempert, Julius: Improvement of Hearing in Cases of Otosclerosis: A New One Stage Surgical Technic, Arch. Otolaryng. 28:42 (July) 1938.

[4] Shambaugh, G. E., Jr.: The Surgical Treatment of Deafness, Illinois M. J. 81:104 (Feb.) 1942.

[5] Lempert, Julius: Fenestra Nov Ovalis: A New Oval Window for the Improvement of Hearing in Cases of Otosclerosis, Arch. Otol. 34: 880-912 (Nov.) 1941.

[6] Shambaugh, G. E., Jr.: Surgical Treatment of Otosclerosis: Comparative Analysis of Results Using Different Technics, Ann. Otol. Rhinol. & Laryng. 51:817 (Sept.) 1942.

The present experimental and clinical investigation was undertaken to determine as far as possible the permanence of the artificial fistula in the labyrinth created by the fenestration operation as it is now done.

The experimental studies of labyrinthine fistulas have been carried out at Northwestern University during the past four years.[7] Monkeys were used, because the far reaching similarity between the ears of man and of monkey should make the results applicable to the human being. By means of tiny instruments especially made for the fenestration operation on the monkey, it has been possible to duplicate in every essential detail the technic that I have used on the human being during this time.

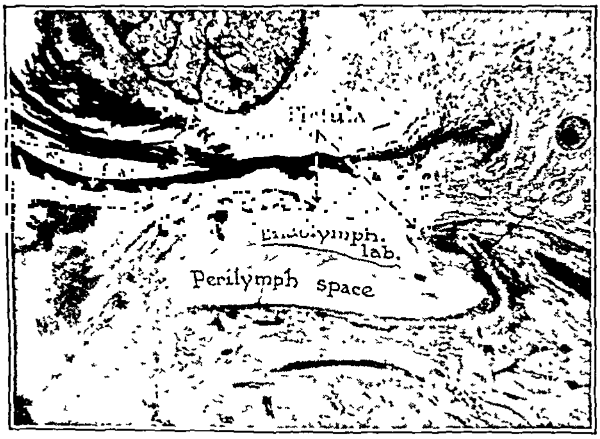

Fig. 3.—Labyrinthine fistula is wide open in monkey one year and six days after operation by nov ovalis fenestration technic with constant irrigation and microscope

The irrigating apparatus and the microscope were found to be even more indispensable in making a perfect fistula in the monkey than in the human being. With this technic we have been successful for the first time in making a labyrinthine fistula in the experimental animal which has remained open with a positive fistula test longer than a year after operation (fig. 3).

By killing the monkeys at different intervals after operation and examining the ears microscopically we are able to reconstruct what occurs in the human ear after the fenestration operation.

The first evidence of osteogenesis is seen on the fourth day after operation in a heaping up of osteoblasts along the periosteum of the mastoid air cells. By the end of the first week trabeculae of pink staining new bone begin to appear in the thickened mucosal lining of the mastoid air cells (fig. 4). At the fistula, however, new bone formation is definitely retarded and inhibited since it appears later and in considerably smaller amount than elsewhere. This new bone begins from the periosteal layer of the bony labyrinthine capsule (fig. 5) and tends to extend under the skin flap toward the fistula mouth. About the same time, that is about two weeks after operation, new bone begins to spring from the endosteal layer of the capsule within the margins of the fistula, especially if the endosteum has been traumatized. By the end of the third week osteogenesis at the mouth of the fistula is very active in many ears with pale pink staining new bone growing from all three layers of the capsule but particularly from the periosteal and endosteal layers (fig. 6). About six weeks after operation osteogenesis passes its peak of activity in most ears, while at four months it frequently appears to have slowed down almost to a stop with practically no pale pink new bone, and the healing processes at the fistula appear virtually completed (fig. 7).

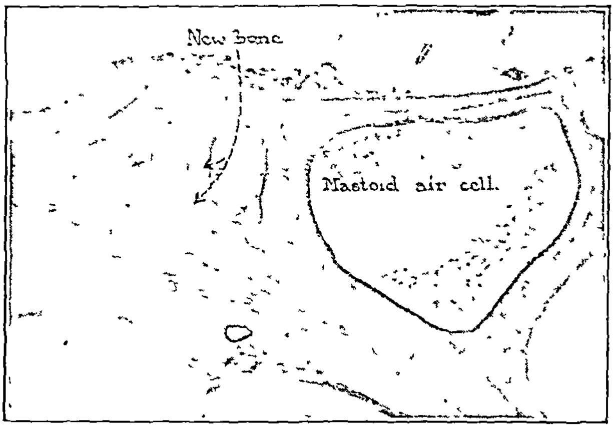

Fig 4.—Osteogenesis beginning in mastoid air cells of monkey one week after fenestration.

Study of monkey operations carried out on 42 ears with various modifications of technic indicate that the following factors govern osteogenesis after the fenestration operation:

1. Probably the most important single factor that permits us to make a fistula into the labyrinth that frequently remains open is the peculiarly sluggish response to trauma of the enchondral layer of the labyrinthine capsule. The enchondral bone of the labyrinthine capsule is unlike bone anywhere else in the adult skeleton. It may be recognized by its islands of ossified cartilage. Once formed by ossification of the primitive cartilaginous otic capsule during the fifth month of fetal life, it remains relatively unchanged and inert throughout idividual. Everywhere else in the body,

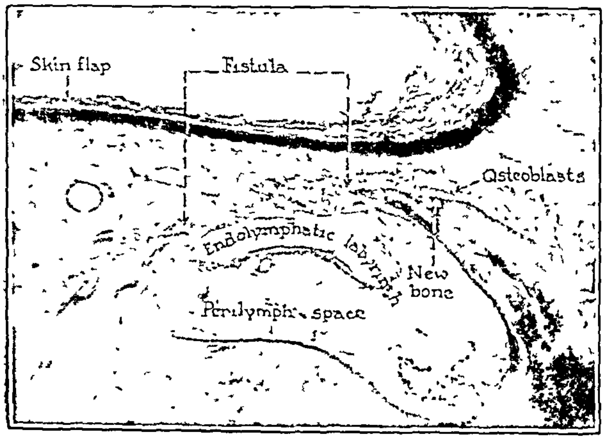

Fig. 5.—Beginning osteogenesis near the labyrinthine fistula of monkey ten days after fenestration.

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[7] Under a Research Grant from the Markle Foundation to Northwestern University.

bone derived from fetal cartilage is later resorbed and replaced by periosteal bone.

The sluggish response of enchondral bone to trauma has long been known to otologists, who have observed fractures through the labyrinth that remained unhealed except for fibrous tissue for many years. Our monkey experiments have confirmed the fact that the enchondral layer responds less readily to trauma with new bone formation than does the thin inner endosteal layer of the capsule or the thick outer periosteal layer.

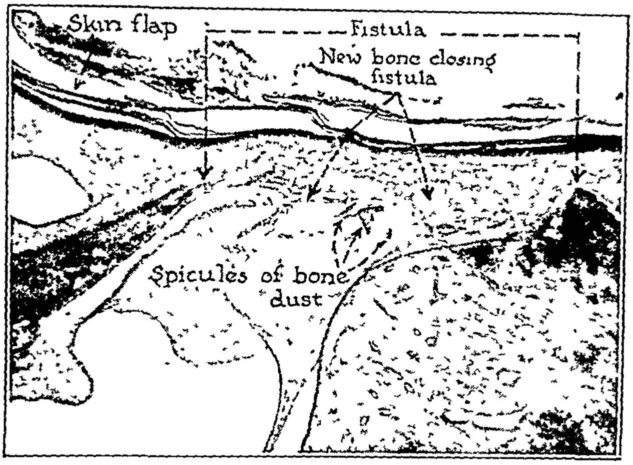

Fig 6.—Osteogenesis rapidly closing the fistula in monkey three weeks after fenestration.

With the fenestration technic that I now use, I take advantage of the relatively inert properties of the enchondral layer by exposing it as widely as possible beyond the margins of the fistula. In order to accomplish this I reduce the superior bony wall of the fistula to a thin shell of enchondral bone, so that the completed fistula lies on the top of a mound rather than at the bottom of a depression (fig. 8).

2. The inhibiting effect of stratified squamous epithelium on osteogenesis is a major factor in maintaining a permanently open labyrinthine fistula. Otologists have long been familiar with the permanence of spontaneous labyrinthine fistulas produced by cholesteatomes where stratified squamous epithelium lies against the bone, as contrasted to the temporary nature of fistulas produced by other types of bone disease. Orthopedic surgeons recently have employed Thiersch grafts to line osteomyelitic cavities in bone after curettage of the diseased bone, and they have remarked on the fact that such cavities lined by skin show no tendency whatever to fill in with new bone, whereas with any other type of treatment the bony defect tends to fill in by osteogenesis. Our monkey studies clearly show the inhibiting effect of skin on new bone formation, and they show further that the closer the epithelium lies to the bone the greater its inhibiting effect, and therefore the thinner the skin flap the better (fig. 8).

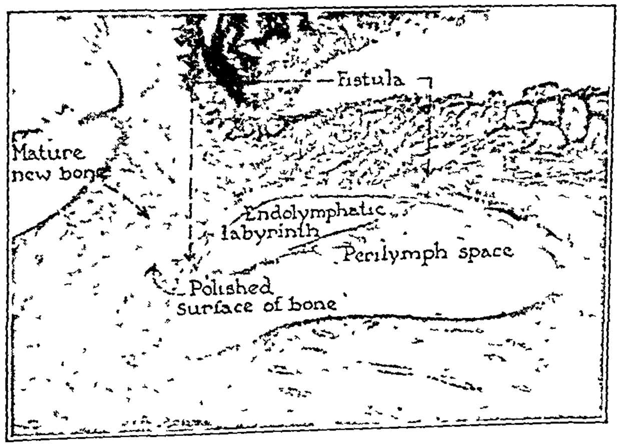

Fig 7.—Osteogenesis and healing virtually completed and fistula wide open in monkey four months after fenestration Note the absence of osteogenesis from the polished bone surface of the fistula margin.

3. The third major factor influencing osteogenesis is the presence of bone dust or bone chips. Orthopedic surgeons have long known that bone dust and fragments exert a powerful stimulus to osteogenesis. It has been shown that this effect is chiefly chemical, so that the bone fragments need not be viable. The striking and immediate improvement in my results when the constant irrigating technic was introduced is attributable to its success in washing away every particle of bone dust (fig. 9).

Complete removal of the endosteum over the mouth of the fistula is required to remove the particles of endosteal bone that remain adherent to it. This is best accomplished by the use of adequate magnification with the microscope in a field kept immaculately clean by the constant irrigating apparatus.

Table 1.—*Summary of Fistulas That Closed*

Technic	Total Operations	Fistulas Closed to Date: Number	Fistulas Closed to Date: Percentage
I. Original Lempert fenestration operation	15	8	53
II. Irrigating apparatus added	30	7	23
III Irrigating apparatus and microscope added	63	16	25
IV. Nov ovalis operation with irrigation and microscope	822	22	3

Table 2—*Time After Operation That Fistulas Closed*

Technic	Total Closed	Months After Operation: 2	4	6	8	10	12	18	24	30
I	8	4	1	2	1	..	..	..	..	..
II	7	..	4	..	..	..	2	..	..	1
III	16	3	1	3	4	1	2	1	..	..
IV	22	..	1	1	6	6	2	3	3	..

4. The endosteum, like periosteum, is a very thin layer of dense connective tissue closely applied to the inside of the bony labyrinth. Immediately beneath it lies the thin endosteal layer of the bony capsule. This endosteal bone reacts readily and promptly by osteogenesis to any trauma that interrupts the integrity of the endosteal membrane. *Avoidance of instrumentation to the bony walls within the mouth of the fistula is essential to avoid injury to the endosteum.*

5. In the healing of bony defects any irregularities tend to be smoothed over by new bone formation; leaving the bone surface smooth and polished eliminates this normal incentive to bone formation (fig. 7).

6. The intact endolymphatic membranous labyrinth in the mouth of the fistula becomes closely adherent to the skin flap and acts to hold the mouth of the fistula open (figs. 7 and 8).

The ideal fistula is covered by the thinnest possible skin flap closely adherent to the bony margins, the enchondral bone of the capsule is widely exposed around the mouth of the fistula, the endosteum covering the mouth of the fistula with its adherent bone particles is completely removed and bone dust is prevented from entering the perilymph space, and the endolymphatic labyrinth within the fistula remains intact (fig. 8). Our experimental studies indicate that no single one of these factors that inhibit osteogenesis is sufficient by itself to prevent closure, but attention to all of the factors will frequently result in a permanently open labyrinthine fistula in the monkey (fig. 3).

For our clinical study of the permanence of the hearing improvements after the fenestration operation we have available the complete data on 930 consecutive fenestration operations carried out by me during the past seven and one-half years. There have been no fatalities, operative or postoperative. There were only two serious complications, consisting of postoperative facial nerve paralysis with only partial recovery a year after operation.

It is generally agreed that in judging the results of treatment for deafness audiometric tests must be used. The preoperative hearing level is the average of three or four hearing tests taken on different days before operation. Since it is the patient's ability to understand speech that we are mainly interested in, we average the decibel loss for the three speech frequencies of 512, 1,024 and 2,048 cycles as the "preoperative decibel loss for speech." The postoperative result is expressed in terms of decibels gained or lost from the preoperative level for speech. To be significant this gain or loss must exceed the preoperative level by at least 10 decibels. The complete summarized data on every patient are kept on a "fenestration score board" which hangs in the Wesley Memorial Hospital in Chicago and which is available for all to see. Every time a patient is retested, his audiometric data on the score board is brought up to date. Audiometric tests are made every few months the first year after operation and at least once a year thereafter.

Table 3.—*"Almost Certainly" Permanent Results (Two Years or Longer)*

Technic *	Total Number of Operations	Tested 2 Years or More After Operation	Hearing Never Improved	Closure with Loss of Improvement	Narrowed with Partial Loss of Improvement	Improvement Fully Maintained, 10 Decibels or More
I	15	15	3 20%	8 53%	4 26%	0
II	30	29	1 3%	7 24%	13 45%	8 27%
III	63	55	1 2%	16 29%	11 20%	27 49%
IV	822	238†	9 4%	8 4%	10 4%	211 88%

* Technic I. Original Lempert
Technic II. Original Lempert with irrigation
Technic III. Lempert operation with irrigation and microscope
Technic IV. Nov-ovalis with irrigation and microscope.

† Patients not included in this group were operated on more recently than two years ago or did not return after two years for an audiogram.

In our clinical study of the permanence of the fistula we must differentiate between a fistula sufficiently wide open to permit the free passage of sound vibrations and a fistula which may still be partially patent with a positive fistula test but can no longer transmit sound. Of the 930 fenestration operations performed between July 1938 and December 1945, hearing improvement in 53 has been lost to date. Reoperation was carried out in 30, and in every instance the hearing loss was found to be due to new bone closing the fistula, although the fistula test remained positive in some of these, because of a band of fibrous tissue extending through a tiny opening in the new bone from the skin flap to the membranous labyrinth.

In some patients there has been a great initial hearing improvement followed after a few months by a partial recession, but not to the preoperative level. Reoperation in a few of these has revealed in each case an open but narrowed fistula. It is interesting to observe that the hearing in these cases tends to reach a level between the first and second year which is then continuously maintained as a moderate improvement, suggesting that active osteogenesis narrowing the mouth of the fistula has ceased after the second year.

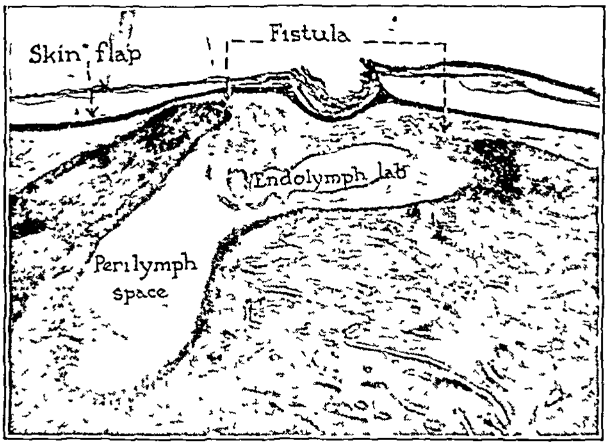

Fig 8 —Ideal fenestra with no osteogenesis at the margins in monkey six weeks after fenestration Note the thin skin flap closely adherent to the margins of the fistula There is complete absence of bone fragments. The fistula is situated at the top of a mound rather than at the bottom of a depression

From these observations we conclude that the functional patency of the fistula to sound can be judged by the hearing improvement as determined by audiometric tests.

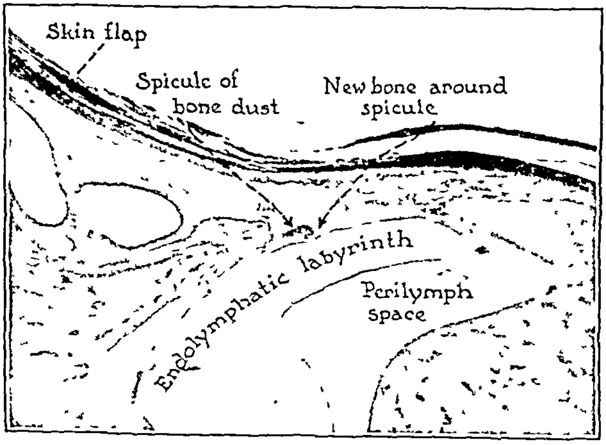

Fig 9 —Osteogenesis around a particle of bone dust narrowing the mouth of the fistula in a monkey three and one half months after fenestration.

In table 1 are analyzed all of my 930 consecutive fenestration operations from July 1938 to December 1945 with respect to the functional patency of the fistula to sound. Observe the decreasing proportion of cases in which hearing improvement was lost as the result of bony closure of the fistula with each major improvement in technic.

In table 2 the 53 fenestras that closed are analyzed according to the time after operation when the hearing reached the preoperative level, indicating complete functional closure. Observe that, of the fistulas that closed, 82 per cent did so within one year after operation. A few fistulas closed between the first and second years, but only 1 fistula closed after two years. Thus 98 per cent of fenestras that closed did so within two years after operation. This is of great significance and importance in considering the permanence of the fistula and the hearing improvement after the fenestration operation, for it means that a patient who maintains his hearing improvement for more than one year after the operation *is likely to retain it, while he who maintains his improvement for more than two years will almost certainly keep it permanently* (fig. 10). It means that osteogenesis tending to close the fistula is less active after the first postoperative year and is completely *inactive as a rule by the end of the second year.* It means finally that in judging the value of any new fenestration technic, such as the cartilaginous "stopple" technic, first described a year ago and *prematurely acclaimed* a few months later in *Hygeia* and the *Reader's Digest,* we must have the audiometric data on at least the one year *and preferably on the two year results* in a consecutive series of cases before we can know that the new technic represents an advantage over previous technics.

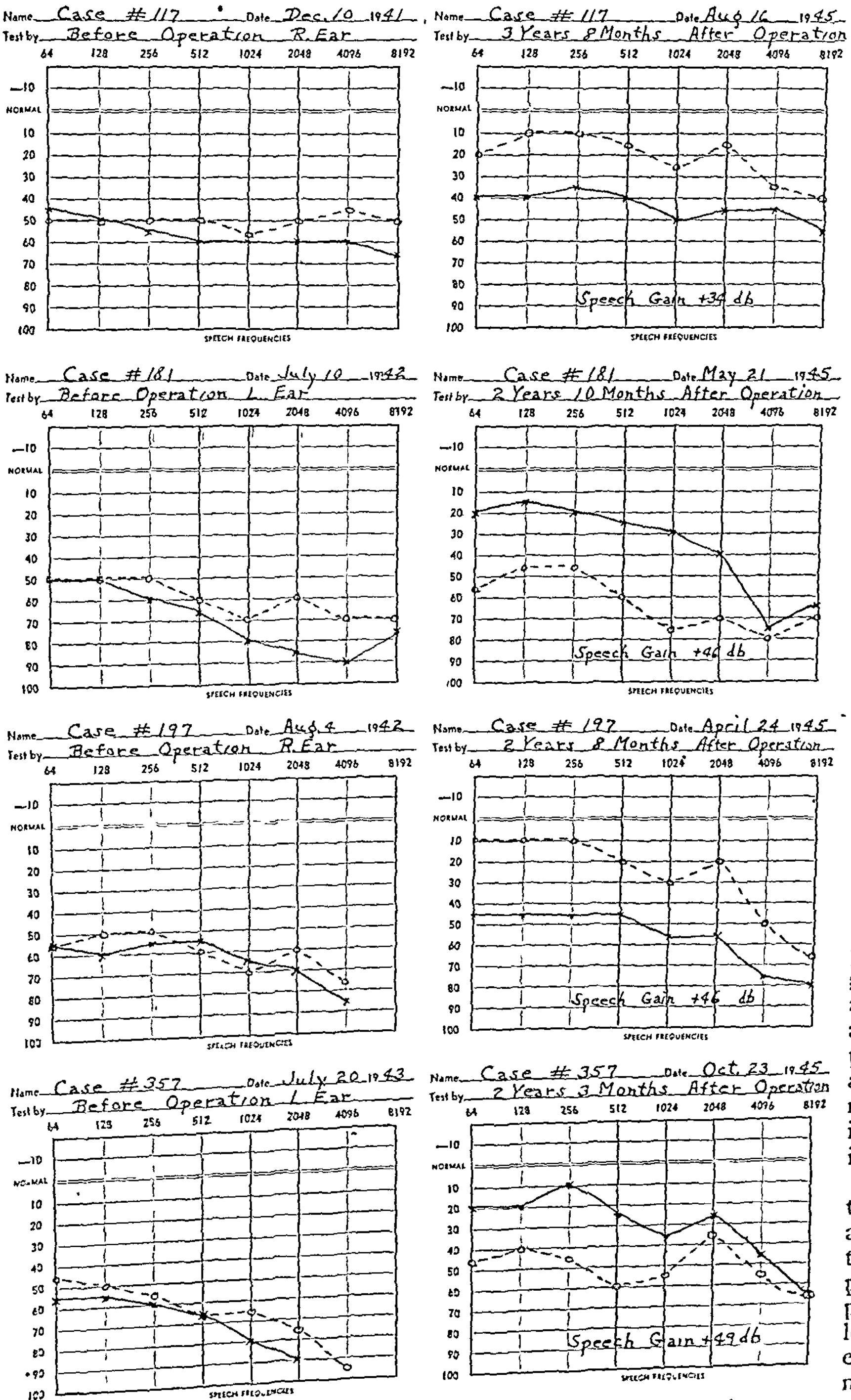

Fig. 10.—Almost certainly permanent hearing improvements two years or more after operation by nov ovalis technic with constant irrigation and microscope: solid line, left ear; broken line, right ear.

Of particular interest are the five year results of the fenestration operation that we are now seeing in considerable numbers (fig. 11). It is significant that the hearing after five years in all of these cases is the same as at the end of two years after operation, affording further proof that *osteogenesis tending to close the fistula as a rule is no longer active two years after operation.*

In table 3 are summarized only the cases in which audiometric tests have been made two years or more after operation and in which hearing results may be regarded as almost certainly permanent. *In the technic used for the past four years, namely the Lempert "nov-ovalis" operation with the addition of the constant irrigating apparatus and the microscope, 92 per cent of the two year results show a permanent hearing improvement.* Not all patients maintained their maximum gain: 4 per cent lost part, but not all, of their improvement, and the average hearing improvement for this 4 per cent is now 21.7 decibels. *The average gain for the 88 per cent that maintained their maximum hearing improvement for more than two years is 28.9 decibels.*

For statistical purposes we classify the results of the fenestration operation according to the decibels gained, but this does not necessarily *measure* the practical value of the operation to the patient. Thus a person with a hearing loss before operation of 40 decibels will experience a *satisfactory* result by a mere 12 or 15 decibel gain, whereas persons with a greater preoperative loss will require a greater gain to regard the operation as worth while. Nor can we judge the operation solely by the postoperative level reached without reference to the preoperative loss, for some of our happiest and most satisfied patients are those with a preoperative loss of 80 or 85 decibels who by gaining 45 or 50 decibels now have a hearing level at 35 or 40 decibels loss. The exact value of the operation to each patient is difficult to measure statistically. For purposes of comparative analysis of results with different technics, the number of decibels gained appears to be the most practical measure.

COMMENT

Experimental and clinical studies of the permanence of the labyrinthine fistula after the fenestration operation indicate that the osteogenesis tending to close the fistula is most active during the first few months after operation, after which the processes of healing approach completion and osteogenesis becomes less and less active. Most of the fistulas that will close do so within the first year after operation. After the second postoperative year all osteogenesis as a rule has ceased and an open fistula with a maintained hearing improvement may be regarded as almost certainly permanent.

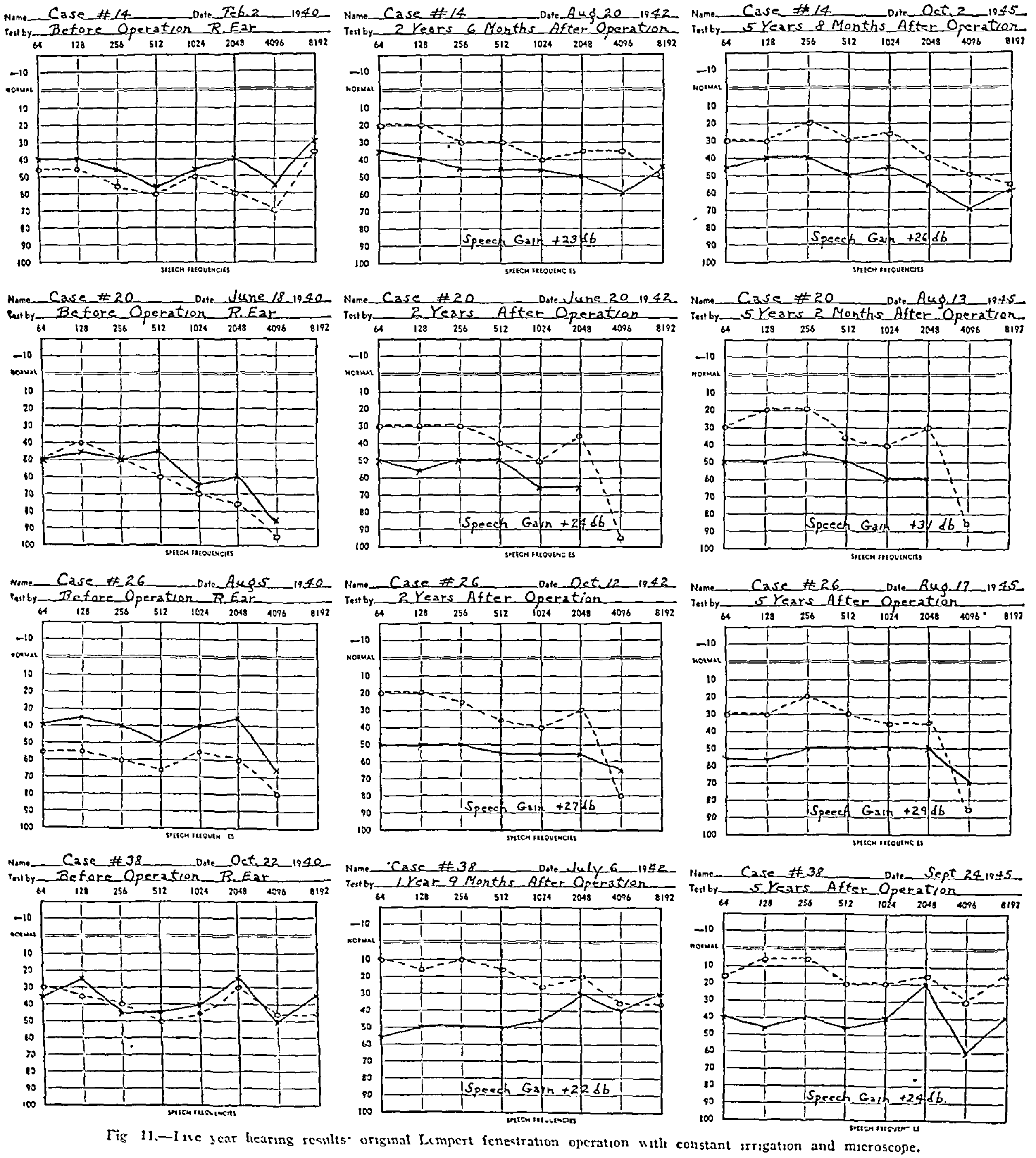

Fig 11.—Five year hearing results: original Lempert fenestration operation with constant irrigation and microscope.

With the technic that I have employed during the past four years bony closures have been reduced to less than 5 per cent after two years. Thus the major cause for failure in the surgical improvement of hearing in otosclerosis has been largely overcome. Nevertheless the results of the fenestration operation still leave much to be desired. Perfectly normal hearing is attained by the operation almost never, though the hearing in many cases is sufficiently close to normal to be regarded as normal by the patient and his friends. In some cases the hearing improvement is not sufficient to be of practical value. There are approximately 5 per cent of patients whose hearing is never improved, is made worse or is even entirely destroyed in the operated ear. For this reason the poorer hearing ear should be chosen for operation. The operation is not without risk: fatalities and serious complications have been reported.

The prospective candidate for the fenestration operation must first be carefully examined to determine his suitability for the procedure. He must be prepared to take the risks and the uncertainties of this purely elective operation. He should also be prepared for the vertigo that always accompanies and follows operative opening of a semicircular canal. As a rule this dizziness promptly subsides, so that the patient is out of bed by the fourth day and walks out of the hospital on the eighth day after operation, but dizziness sufficient to be annoying sometimes persists for many months, the longest in my series being two and one-half years after operation. Finally, the technic of the fenestration operation is as painstaking and delicate as any surgical procedure done on the human being and can be acquired only by careful and extensive cadaver experience.

CONCLUSIONS

Experimental studies on the fenestration operation in the monkey indicate that the following factors govern osteogenesis tending to close the fistula:

1. The sluggish response to trauma of the enchondral layer of the labyrinthine capsule.
2. The inhibiting effect of stratified squamous epithelium on osteogenesis.
3. The stimulating effect of bone dust and fragments on osteogenesis.
4. The stimulating effect on osteogenesis of trauma to the endosteum within the labyrinth.
5. The inhibiting effect on osteogenesis of a smooth polished bone surface.
6. The tendency of the intact membranous labyrinth closely adherent to the skin flap to hold the mouth of the fistula open.

By attention to all of the factors governing osteogenesis, using the "nov-ovalis" fenestration technic with constant irrigation and the microscope, it has been possible for the first time to make a labyrinthine fistula in an experimental animal which has remained open for more than a year. With this technic the closures in the human patients have been reduced to less than 5 per cent after two years.

Clinical analysis of results in 930 consecutive fenestration operations over seven and one-half years indicates that osteogenesis tending to close the fistula is as a rule no longer active two years after operation.

The two year hearing result of the fenestration operation may be regarded as the permanent result.

55 East Washington Street.

Identification and the Postwar World.—There are three interrelated kinds of identification: (1) that of an individual with some other older and more important (or in some other way envied and preferred) person whom the individual in question wants to be like, (2) that of an individual with some whole group which he wants "to love" and "to be loved by," and finally (3) that of an individual with a cause proclaimed by a group.—Tolman, Edward Chace: Identification and the Postwar World, in *Twentieth Century Psychology*, New York, Philosophical Library, 1946.

BRONCHOGENIC CARCINOMA

Diagnosis by Cytologic Study of Bronchoscopically Removed Secretions

PETER A. HERBUT, M.D.
and
LOUIS H. CLERF, M.D.
Philadelphia

Although the technic in thoracic surgery has been perfected to such a degree that at present there is no more risk in performing a thoracotomy than there is in performing a laparotomy, the death rate from carcinoma of the lung is still appallingly high. It appears that the two most important factors responsible for the decrease in curability are the tardiness on the part of the patient in consulting a physician and the delay on the part of the physician in arriving at a correct diagnosis. The former can be decreased only by a more widespread and effective education of the general public to increase the awareness of the gravity of any persistent pulmonary signs and symptoms and by mass periodic roentgen surveys of the lungs. The latter can be reduced by increasing the acuity of the already well established diagnostic procedures or by devising new methods that will aid in making an early diagnosis.

The generally accepted present day methods of diagnosing pulmonary carcinoma consist in a consideration of the signs and symptoms, roentgenography, bronchography, bronchoscopy and microscopic study of tissue obtained endoscopically, at thoracotomy or by direct aspiration of the tumor through the chest wall. Unfortunately significant signs and symptoms are often not present until late in the disease. Roentgenography and bronchography are of great value in making an outright diagnosis when the process is well established and are useful in picking up initial infiltrations but often are of questionable aid in distinguishing early carcinoma from noncancerous pulmonary lesions. Bronchoscopy is undoubtedly the best single procedure for diagnosing lesions present in the trachea, main bronchi or their immediate subdivisions but is of little positive value in diagnosing the more peripheral neoplasms. By this method hilar tumors can be directly visualized and a portion removed for microscopic study, or, if no endobronchial neoplasm is seen, the fixation of the bronchus and surrounding structures offers indirect evidence of the cancer. In either case, however, although a correct diagnosis can be thus established, the lesion has only too often infiltrated such vital structures that successful surgical extirpation is impossible. The only diagnostic procedure, perhaps, that approaches infallibility is the microscopic study of removed tissue. But this too can often be accomplished only when the cancer has progressed beyond the stage of curability. This is certainly true of most cases in which tissue can be removed endoscopically and is likewise true of the cases in which it can be obtained at thoracotomy, for the latter can be accomplished with impunity only when the growth has reached the pleura or mediastinal nodes. Aspiration biopsy, while enthusiastically advocated by some workers,[1] is condemned by others.[2] If an unequivocal diagnosis of carcinoma cannot be made preoperatively, who can say at the time of thoracotomy a small, centrally

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From the Clinical Laboratories and Department of Bronchoesophagology, Jefferson Medical College Hospital.

[1] Craver, L. F.: Diagnosis of Malignant Lung Tumors by Aspiration Biopsy and by Sputum Examination, Surgery 8: 947, 1940.

[2] Ochsner, A.; Dixon, J. L., and De Bakey, M.: Primary Bronchogenic Carcinoma: An Analysis of 190 Cases, 59 of Which Were Successfully Treated by Pneumonectomy, with an Analysis of the Literature, Clinics 3: 1187, 1944.

placed intrapulmonary lesion (the only stage at which a pulmonary cancer can be cured) is a carcinoma, unresolved or organized pneumonia, an abscess or an anthracotic or silicotic nodule? It appears, therefore, that any innocuous procedure that will aid in establishing an early definitive diagnosis, particularly in the tumors located at the periphery or in the upper lobes, would be of great value in reducing the present high mortality rate. It has been our experience that examination of bronchial secretion for cancer cells offers such an opportunity. At least, we have found this procedure encouraging enough to continue its use, and we hope that it will receive a thorough trial in other clinics.

Sporadic reports of examination of sputum for cancer cells appeared in medical literature as early as the last century.[3] At present, apparently, this method is used with considerable success in countries other than our own. Thus in England[4] positive diagnoses are reported in as high as 68 per cent of cases of bronchogenic carcinoma, in Russia[5] 70 per cent, in Denmark[6] 86 per cent and equally enthusiastic reports have been published in Latin American literature.[7] Although this method has been tried in the United States, it has not been very popular or considered of much value, as witnessed by the following statements: "Only exceptionally may the diagnosis be made from a study of the cytology of the sputum."[8] "The pathologist may on rare occasions make a diagnosis from fragments of tumor discovered in the sputum."[3] "Rarely portions of growth are expectorated and can be submitted to microscopy."[9] "Little valuable information was obtained."[10] "With exception of the 2 cases (in a series of 175) just mentioned there has been no case in which the examination of the sputum has revealed tumor cells"[1] "Sometimes fragments of tumor tissue acceptable for diagnostic purposes are obtained by bronchial aspiration."[11] "It has been of value in a few of our cases."[2]

The finding of tubercle bacilli in bronchial secretions of many cases in our clinic when they could not be found in the sputum, the frequency with which cancer cells are found in histologic sections of the bronchioles and bronchi in both primary[12] and secondary[13] pulmonary carcinoma, the encouraging reports of the presence of cancer cells in sputum just referred to and the excellent results obtained by examining vaginal smears for cancer cells in carcinoma of the cervix and uterus[14] led us to examine bronchial secretions for tumor cells. We chose bronchial secretion rather than sputum, for while the advantage of the latter method over the former lies solely in the ease with which the respective material is obtained this precedence loses its importance when, as will be seen subsequently, the results of the two methods are compared. Sputum is more dilute than are bronchial secretions, and so the chances of finding cancer cells are considerably diminished. Furthermore, expectoration of sputum does not occur until late in the disease, at which time a diagnosis can be easily made by other means. Bronchoscopy, on the other hand, is performed routinely in all modern clinics in every case of suspected pulmonary carcinoma. If during this procedure the trachea and bronchi are filled with secretions these can be aspirated and discarded and only those secretions which come from the region of the suspected tumor sent to the laboratory for examination. This material is more likely to contain cancer cells than are the more dilute secretions found in the trachea and the even more dilute sputum. Furthermore, in those cases in which there is no expectoration of sputum there is usually some secretion in the trachea and bronchi which can be aspirated during bronchoscopy and sent to the laboratory for study. For these reasons we believe that examination of bronchial secretions for neoplastic cells is superior to examination of sputum.

MATERIAL AND METHOD

Initially bronchial secretions were obtained from several cadavers of persons known to have had bronchogenic carcinoma prior to autopsy. The sternum and heart were removed in the usual manner; all the blood and serum were carefully mopped away, and the trachea and bronchi were exposed in situ without any undue manipulation and with care that the incisions were not carried through tumor tissue. The exact location of the primary tumor having been told beforehand, the secretions just proximal to this site were aspirated without touching the mucosa or the tumor. Then a small portion of the solid tumor was removed from which both histologic sections and smears were made, the latter being stained simultaneously with smears of the bronchial secretions.

After several such cases were studied and we were familiar with the appearance of cancer cells in smears, we studied secretions obtained at bronchoscopy from a variety of inflammatory pulmonary lesions and from patients suspected of having bronchogenic carcinoma. In the latter groups, as already indicated, when the trachea and bronchi contained an abundant amount of secretion this was first aspirated and discarded and only that sent to the laboratory which came from the region of the suspected tumor. When the secretions were scanty, everything that could be obtained by aspiration was saved In cases in which a tumor was visualized endoscopically it was made certain that the neoplasm was not traumatized with the bronchoscope in order that only spontaneously sloughed material might be examined. The aspirator was washed with a small quantity of saline solution only when the amount of secretion was too scanty to reach the collector. As soon as the material was obtained it was sent to the laboratory, where smears were made immediately and, while still wet, were fixed in equal parts of 95 per cent alcohol and ether and stained by the Papanicolaou technic.[14]

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[3] Weller, C V The Pathology of Primary Carcinoma of the Lung, Arch Path 7:478 (March) 1929

[4] Dudgeon, L S, and Wrigley, C. H. On the Demonstration of Particles of Malignant Growth in the Sputum by Means of the Wet Film Method, J Laryng & Otol 50:752, 1935 Barrett, N R Examination of the Sputum for Malignant Cells and Particles of Malignant Growth, J Thoracic Surg 8:169, 1938 Gowar, F J S Carcinoma of the Lung The Value of Sputum Examination in Diagnosis, Brit J. Surg 30:193 (Jan) 1943

[5] Althuyzen, A R Diagnostic Significance of Sputum Examination in Cancer of the Lung, Klin Med, 1939, numbers 9 10, p 90

[6] Wandall, H H On the Demonstration of Neoplastic Cells in Sputum, Acta path & microbiol Scandinav 20:485, 1943

[7] Nosto, D, and Polak, M Valor de la inclusion de esputos para el diagnostico del cancer de pulmon Su importancia como metodo decisivo de diagnostico, Sem med 44:1549, 1937 Bence, A. E El lavado bronquial en le diagnostico precoz del cancer de pulmon, ibid 47:836, 1940 Izzo, R A, and Irigoyen, L Importancia de la inclusion de esputos para el diagnostico del cancer bronchopulmonar, Publ d centro investig tisiol 7:323, 1943

[8] Fishberg, Maurice Diagnosis of Pulmonary Neoplasm, Arch Int Med 37:745 (June) 1926

[9] Edwards A T Malignant Disease of the Lung, J Thoracic Surg 4:105, 1934

[10] Tuttle, W M, and Womack, N A Bronchogenic Carcinoma: A Classification in Relation to Treatment and Prognosis, J Thoracic Surg 4:125, 1934

[11] Holinger, P H; Hara, H J, and Hirsch, E F Bronchogenic Carcinoma An Analysis of 175 Proved Cases, Ann Otol Rhin & Laryng 54:1, 1945

[12] Herbut, P A Bronchiolar Origin of "Alveolar Cell Tumor" of the Lung, Am J Path 20:911, 1944

[13] Herbut, P. A "Alveolar Cell Tumor" of the Lung Further Evidence of Its Bronchiolar Origin, Arch Path, to be published

[14] Papanicolaou, G N, and Traut, H F Diagnosis of Uterine Cancer by the Vaginal Smear, New York, Commonwealth Fund, 1943.

When the amount of material obtained was small, all was removed from the collector and smeared, but when the amount was greater than could be utilized it was first poured into a petri dish, placed on a black background and only those portions that resembled bits of sloughed tissue, or that were streaked with blood, were smeared. All sputums secured from patients with positive bronchial smears were treated in the latter manner. At first thick smears were made, but it soon became apparent that thinner ones were more valuable, for in these all cells could be adequately studied. In preparing the smears the material was placed in the center of the slide and gently crushed with another slide, care being taken that any granules which may have been present did not escape peripherally. At first one or two smears were made from each specimen, but because of the inequality of the distribution of cancer cells an arbitrary figure of five smears from each secretion was later adopted, and in a few instances as many as fifteen smears were prepared. Every portion of each slide was methodically examined and an unbiased objective report was submitted, usually on the same day the specimen was received, without any knowledge of the clinical findings except of course on cases studied at postmortem.

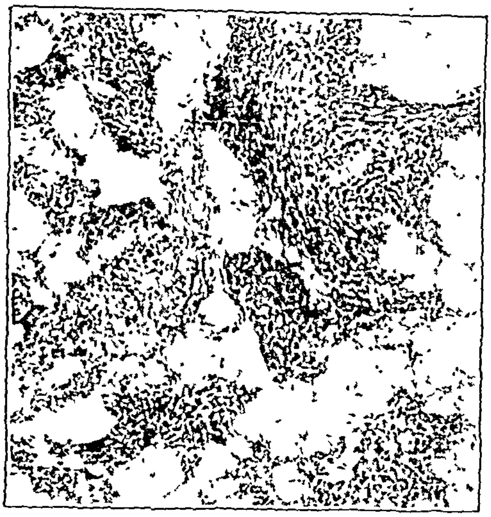

Fig. 1.—Smear of secretions removed endoscopically from a proved case of carcinoma showing four large pieces of tumor in squamous cell formation. The cells stain from pink to orange. Papanicolaou stain × 100.

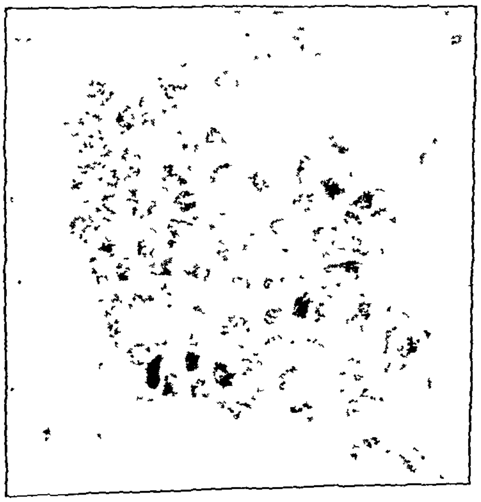

Fig 2.—A group of neoplastic cells in squamous formation removed endoscopically from another case of proved bronchogenic carcinoma. The cells are more compact and the nuclei are more irregular and relatively smaller than are those of noncancerous intermediary epithelium shown in figure 12. The cytoplasm of the cells illustrated in figure 2 stains pink to orange, whereas that shown in figure 12 stains a bluish green. Papanicolaou stain × 400

RESULTS

There were a total of 106 separate examinations in 83 different cases. Of the 106 specimens submitted 7 were sputums and 99 were bronchial secretions. Initially in the entire group of 83 cases there were 23 cases in which cancer was not suspected and which consisted of bronchiectasis, bronchitis and asthma. These were used deliberately as controls in order to become acquainted with the various cells seen in different pathologic processes. To this group were added 18 other cases in which clinical data were merely suggestive of carcinoma but which later proved to be noncancerous. There were 42 cases with sufficient clinical evidence to be seriously considered as carcinoma, and of this group 38 were subsequently proved to be cancer by obtaining tissue bronchoscopically, at thoracotomy, at biopsy of metastatic nodules, at necropsy or by death with obvious metastasis. In the entire group of 38 cases secretions were positive for cancer cells in 30 cases, or 79 per cent. In 8 of these 38 cases bronchial secretions were obtained at postmortem only, and in 30 cases they were obtained bronchoscopically during life. In this group of 30 cases cancer cells were present in the secretions of 22, or 73 per cent, while in the same group of cases a histologic diagnosis of carcinoma was made from tissue removed endoscopically in 11 cases, or 36 per cent. There were, however, 7 other cases in which there was fixation of a bronchus and surrounding tissue, making a total of 18 cases, or 60 per cent, in which there was a positive bronchoscopic examination. Cancer cells were present in the secretions in all cases but 1 in which tissue could be removed endoscopically, and the failure in this case rests entirely with the technic, since it was one of the first examined. All cases except 2 in which a positive bronchoscopic examination was made but in which tissue could not be obtained endoscopically showed cancer cells in bronchial secretions. In 1 of these the amount of secretion submitted for examination was inadequate and in the other the flora was that of carcinoma but definite tumor cells could not

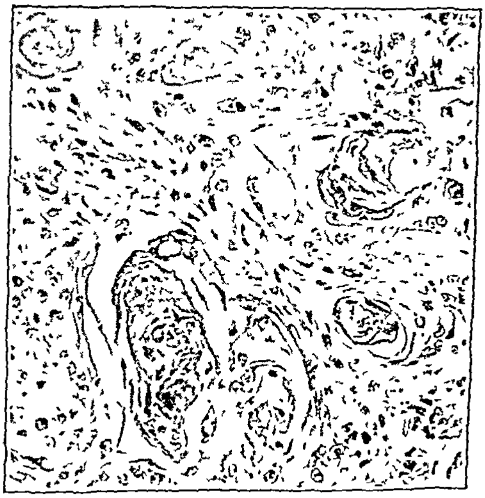

Fig 3.—Section of tissue removed endoscopically from a case of bronchogenic carcinoma showing a mass of irregular squamous epithelium in which there is abundant pearl formation. Hematoxylin and eosin × 100.

be found. There were thus 7 cases in which bronchoscopy was entirely negative and in which neoplastic cells were found in the bronchial secretions. Seven examinations of sputum were performed in 5 cases with positive bronchial secretions, and in only 1 of these 7 specimens were cancer cells demonstrated. Although it is hardly permissible to speak of percentages when the entire series of cases is as yet so small, we have nevertheless included them because they do show the trend and we are confident that as our experience increases the figures will be even better.

PATHOLOGY

Macroscopic.—It is of course common knowledge that the appearance and consistency of bronchial secretions vary with the nature of the underlying disease process. In all our cases in which cancer cells were found the secretions were, however, quite characteristic although not necessarily pathognomonic. The amount varied from a few drops to 4 cc. The color ranged from gray and watery to somewhat creamy and opaque, but invariably it was either streaked with or diffusely mixed with bright red, pink or dark brown partially disintegrated blood. It was always tenacious and adhered closely to the side of the collector and glass slide. Sometimes it was heavy, but at other times it contained bubbles of air or was even somewhat frothy. In only 1 instance out of the entire 38 positive examinations was there perceptible a tiny granule less than 1 mm. in diameter which when crushed was found to consist of cancer tissue. It should be noted, however, that blood tinged secretions are not always indicative of cancer, for in this series there were several such specimens in which neoplastic cells could not be found.

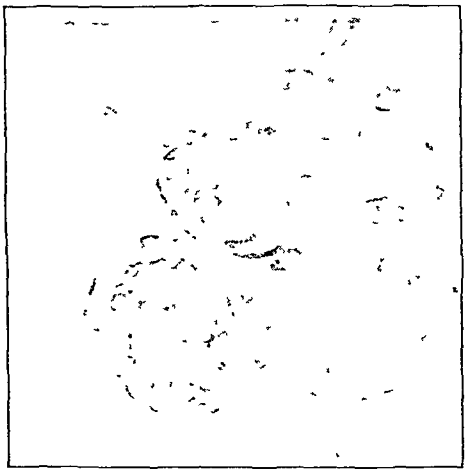
Fig. 4—Smear of bronchial secretions from the same case shown in figure 3 illustrating epithelial cells in pearl formation. Papanicolaou stain × 400.

Microscopic.—Noncancerous Flora: It is almost superfluous to mention that one must first become thoroughly familiar with the noncancerous elements in bronchial secretions. Since all patients undergoing bronchoscopy have some pulmonary disease, one can always expect to find leukocytic cells. The most commonly encountered and readily recognized are polymorphonuclear leukocytes (fig. 11). They differ from those in blood smears only in that, with the staining method employed, their cytoplasm appears light green. Lymphocytes as always are small, round and uniform and contain a scanty amount of light green cytoplasm. Plasma cells are present in varying numbers and show eccentric nuclei and well defined abundant light green staining cytoplasm. Mononuclear phagocytes are sometimes scanty but at other times are numerous. They vary in size from about 10 microns to 30 microns or more. Their cytoplasm is always abundant, is sharply defined, stains light green and frequently contains carbon or other phagocytosed material. Their nuclei are relatively small, round, evenly stained and central or eccentric in position. Accompanying the leukocytes there are always present varying amounts of blue- to green granular precipitate and fibrin.

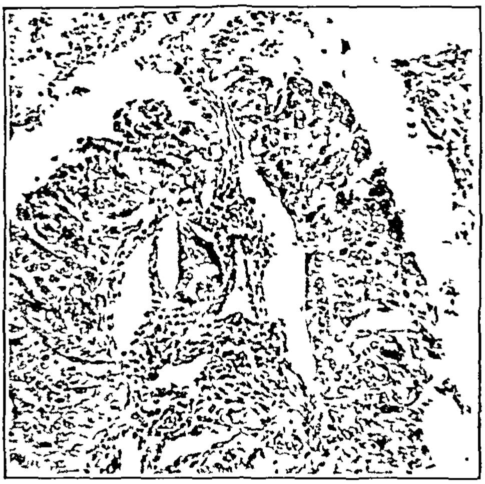
Fig. 5—Section from a case of bronchogenic carcinoma obtained at necropsy showing groups of neoplastic cells partly differentiated into squamous cells but without keratinization or pearl formation. Hematoxylin and eosin × 100

Every bronchial secretion contains sloughed epithelial cells which ordinarily can be readily recognized as noncancerous. In sputum one finds large, polygonal, sharply defined, pavement cells with relatively small round evenly stained nuclei. Their cytoplasm stains pink orange, yellow, blue or green and the cells are found either singly or in groups of a dozen or more. Occasionally a few of these cells are also found in nonneoplastic bronchial secretions, where they probably arrived by aspiration from the upper air passages.

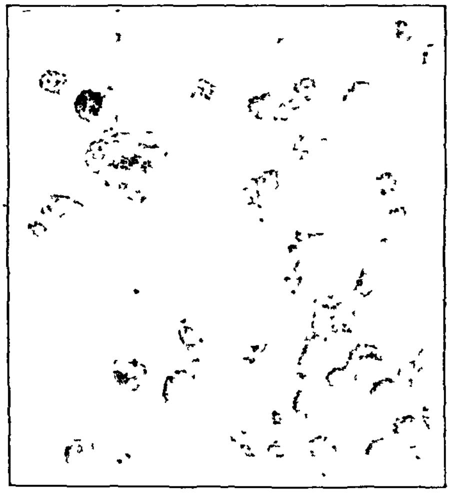
Fig. 6—Smear of tumor from the same case illustrated in figure 5 showing a group of cancer cells of varying shapes and sizes. The nuclear membrane is quite distinct and the nucleoplasm is somewhat "washed out" and clumped. The cytoplasm is relatively scanty. Papanicolaou stain × 400

Ciliated columnar epithelial cells are almost never absent (fig. 11). Ordinarily single cells are easily recognized by their long slender shape with often a pointed base, a central round oval evenly stained nucleus, abundant light green cytoplasm and a broad sharply defined inner border often covered with numerous cilia. When these cells undergo degeneration their outlines break; the cytoplasm becomes irregular and frayed, and the nuclei become swollen, rounded and faintly stained (fig. 11). Sometimes columnar cells appear in dense clusters and superficially resemble groups of stratified squamous epithelial cells, but if there is one such group of cells present there are usually others, and in the less densely packed areas their true outlines often covered with cilia can be discerned. Cuboidal cells with or without cilia are similar to columnar cells, with the exception that they frequently contain vacuoles. Single or small groups of cells, probably derived from the intermediary layers of the epithelium, are not uncommonly present and are important to recognize as such (fig. 12). They are of moderate size, round, oval or polygonal, have sharply defined outlines, blue to green or gray cytoplasm and relatively large, round or oval evenly stained nuclei A few peripheral cells may occasionally contain cilia. Basal cells are least frequently encountered. They resemble somewhat lymphocytes with the exception that they are two or three times as large. Their nuclei are uniform, round or oval, are evenly stained and occupy most of the cell. Their cytoplasm is scanty and stains light green.

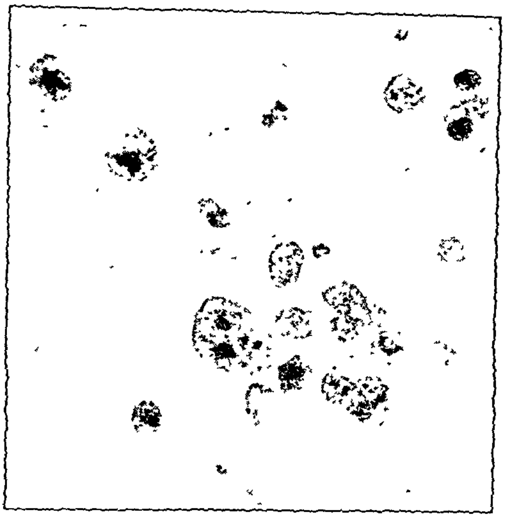

Fig. 7.—Smear of bronchial secretions from the same case illustrated in figure 5 showing tumor cells identical with those seen in figure 6. *Papanicolaou stain* × 400.

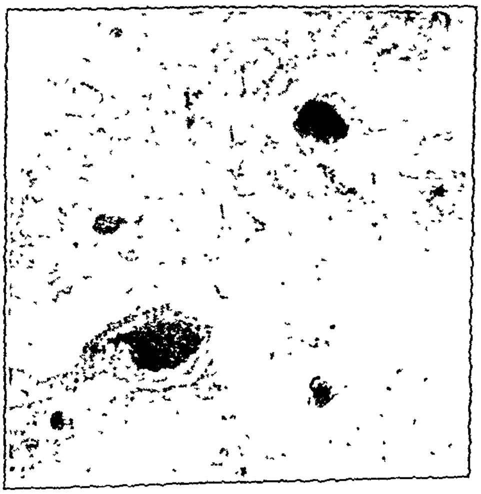

Fig. 8.—Smear of secretions obtained endoscopically from a case of proved moderately well differentiated bronchogenic carcinoma showing two cancer cells. The cytoplasm stains a foggy bluish gray, the nuclear cytoplasmic ratio is increased and the nuclei are extremely hyperchromatic. *Papanicolaou stain* × 400.

Cancerous Flora: Although there is no flora in secretions containing cancer cells that is pathognomonic for pulmonary carcinoma there is nevertheless a certain appearance, difficult to describe precisely, but which gives one the impression that the preparation should contain cancer cells. In such slides leukocytic elements, including fibrin, are usually in abeyance or entirely absent. This is particularly true of the macrophages. Our experience so far has been that, when these are numerous, cancer cells are not found. Because of the absence or decreased amount of fibrin the slides, except for varying amounts of greenish stained precipitate, appear "cleaner" than do those for instance from bronchiectatic cases. Pavement cells, most of which take an orange stain, are often increased in secretions containing cancer cells when the tumor is of a squamous cell variety. Finally, in cancerous secretion erythrocytes are usually fairly abundant.

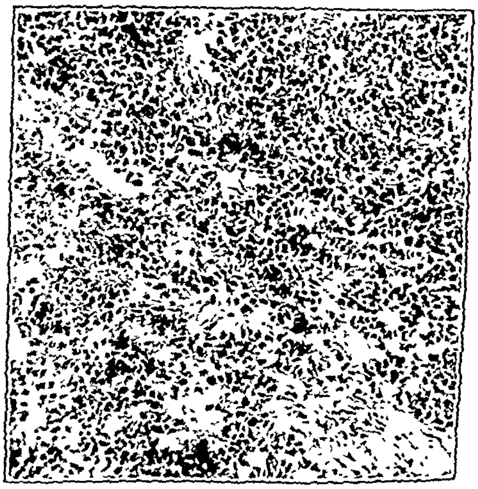

Fig. 9.—Section of tissue from a case of bronchogenic carcinoma of an "oat cell" variety obtained at necropsy. Hematoxylin and eosin × 100.

Cancer Cells: So far we have been able to recognize the following three more or less separate groups of cancer cells in bronchial secretions: (1) clusters of cells which are present in squamous cell carcinoma, (2) large irregular single cells found in the more dedifferentiated tumors and in those with an adenomatous formation and (3) smaller more uniform cells present in the so-called oat cell carcinoma.

In squamous cell carcinoma there are usually small or large pieces of stratified squamous epithelium evenly distributed throughout all slides or present only in one portion of one slide (figs. 1 and 2). If they happened to have been crushed at right angles to the surface one can see the keratinizing cells on the surface, the intermediate prickle cells and even the basal cells. Usually, however, they are seen as a mass of closely packed, relatively large cells whose cytoplasm stains an orange red and whose nuclei are large and dark blue. Cilia are never present. At the periphery there are usually encountered a few detached single cancer cells. They have an abundant amount of blue green to gray, ill defined, peripherally frayed cytoplasm and relatively large, round, oval or slightly irregular deeply stained nuclei. These cells are quite well differentiated and so do not appear as "wild" as do the cells of the more anaplastic tumors to be described presently. Occasionally when there is abundant pearl formation in the original tumor one finds naked pearls within the bronchial secretions (figs. 3 and 4). They are similar to those seen in ordinary histologic sections and consist of whorls of closely packed cells with deep staining, elongated, pyknotic nuclei and bluish green to gray cytoplasm.

When the tumor is less well differentiated, in adenomatous formation or a combination of the two, single cancer cells are found in the secretions (figs. 5, 6, 7 and 8). As would be expected they vary tremendously in size, shape and staining qualities. They are invariably considerably larger than normal cells (sometimes of giant proportions) and assume anything but the regular configurations described. Their borders are almost always ill defined, frayed and fuzzy. The cytoplasm stains bluish green, blue or gray and although absolutely increased it is relatively decreased and sometimes almost entirely imperceptible. The nuclear-cytoplasmic ratio is thus always increased over the normal. While theoretically some of the cells should be vacuolated, this appearance we have not yet encountered. The nuclei are single or multiple and usually are extremely bizarre. Whereas they may be round or oval they ordinarily form irregular, coiled, folded, hexagonal or dumb-bell shaped configurations. Some of the larger and more regular appearing nuclei show a very sharp, deeply stained, peripheral membrane which encloses lightly stained somewhat washed out and clumped nucleoplasm. Other nuclei are solid and so hyperchromatic that the internal structure is not discernible. Nucleoli are not always demonstrable but, when present, they are easily recognizable as round or slightly oval, sharply circumscribed bodies stained either lighter or heavier than the surrounding nucleoplasm. Often as many as four can be seen within a single nucleus.

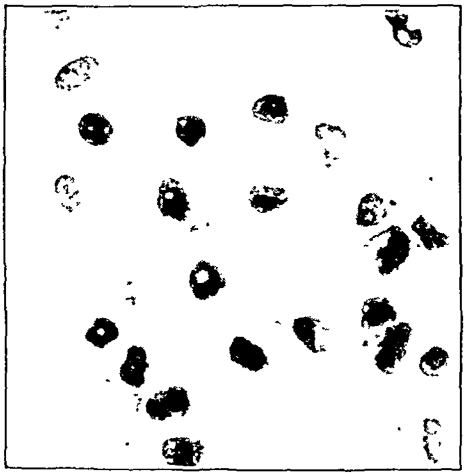
Fig. 10.—Smear of tumor from the same case illustrated in figure 9 showing numerous anaplastic cancer cells. They contain practically no cytoplasm and deeply stained irregularly shaped nuclei. Note the presence of one or more nucleoli within a single nucleus Papanicolaou stain X 400.

As compared with the foregoing cells, neoplastic cells derived from the so-called oat cell carcinoma are relatively small (figs. 9, 10 and 11). They are round, oval or slightly irregular, contain a scanty amount of blue to green cytoplasm and possess round, oval or somewhat irregular, sharply defined, deeply stained single nuclei. They are best identified by their size and by the fact that although the cells are similar there are definite variations in the shape of the nuclei from cell to cell.

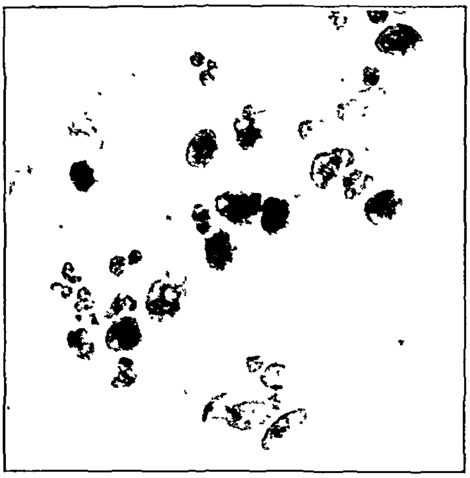
Fig. 11.—Smear of bronchial secretions obtained from the same case illustrated in figure 9. There are ten cancer cells identical with those shown in figure 10. There are present also a few polymorphonuclear leukocytes, one normal columnar epithelial cell with cilia, and two partly degenerated columnar epithelial cells in the lower portion of the photomicrograph. Papanicolaou stain X 400.

COMMENT

In our description of the cytology of bronchial secretions we have allotted almost as much space to normal cells as we have to cancer cells, for it is obvious that without a thorough knowledge of the normal flora one cannot begin to understand the abnormal. Having acquainted oneself with the elements that may be present in the secretions in various disease processes, a diagnosis of carcinoma can be made on finding a single cancer cell. Sometimes it is necessary to search several slides before one such cell is found, and for this reason we have chosen an arbitrary number of five slides from each secretion as the minimum. Usually, however, if there is one cancer cell present there are also others.

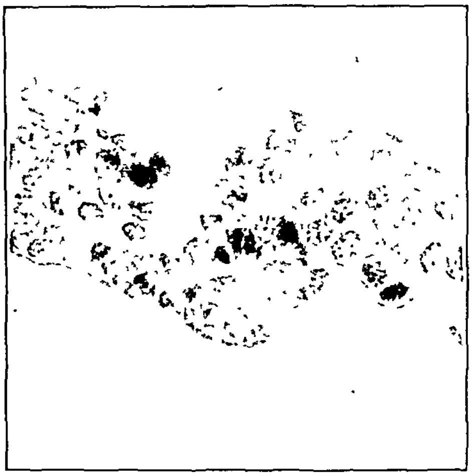
Fig. 12.—Smear of bronchial secretions removed endoscopically from a case of pulmonary tuberculosis showing a group of noncancerous intermediary cells as compared with cancer cells seen in figure 2. They are loosely united and contain large evenly stained nuclei and a relatively small amount of cytoplasm that stains bluish green. Papanicolaou stain X 400.

Bearing in mind the fact that carcinoma of the lung is extremely pleomorphic, the primary tumor in a bronchus or bronchiole is nevertheless most frequently of a squamous cell variety. That this is so is fortunate, first, because such neoplasms grow more slowly than do ones composed of the more anaplastic elements and, second, because in bronchial secretions cells derived from a squamous cell carcinoma are easy to recognize. As would be expected, the cells in such a neoplasm are quite well differentiated and so approach those of normal squamous epithelium. Thus although groups of these cells may look innocent enough, when they are found in bronchial secretions an unequivocal diagnosis of squamous cell carcinoma can be made simply because they are not present in this material under any other circumstances. One must make certain, however, that they are squamous cells and not clumps of cells derived from the intermediate layers of the epithelium or dense aggregations of columnar cells. The former can be distinguished by their staining qualities. Cancerous squamous cells stain pink or orange, while the intermediary cells stain green to blue. Also in the former the different layers can often be discerned, whereas in the latter the cells are more or less uniform in shape and size without stratification. Solid collections of columnar cells are identified by the fact that at the periphery of the clumps there are usually a few cells whose true outline can be traced and by the fact that with fine focusing of the microscope cilia can usually be seen. And it can be stated as axiomatic that any cell or groups of cells bearing cilia are not cancerous.

When bizarre single cells are encountered there is no question of the process being cancerous. Sometimes the neoplastic cells are not quite so irregular and may at times be confused with other cells. With experience, however, a differentiation can ordinarily be made. If one is in doubt as to whether a cell or group of cells are cancerous, the chances are that they are innocent. Lymphocytes, basal cells and macrophages may be confused with cells from an oat cell type of carcinoma. The latter should, however, be distinguishable by their size, deep staining quality, and always the slight but definite variation in the shape of the nucleus from cell to cell. Lymphocytes are considerably smaller, and basal cells, although often of the same size, stain more evenly and less intensely, and the individual cells are more uniform in shape and size. Macrophages should not be difficult to differentiate, for there are usually neighboring cells of exactly the same morphology that contain carbon or other pigment. Pavement cells of course are easily recognized. Their increase in the flora of cases with squamous cell carcinoma can be accounted for, not by aspiration from the upper air passages but by the sloughing of the keratinized neoplastic cells themselves.

The method of examination of bronchial secretions for cancer cells is presented not with the idea of finding a substitute for the already well established and highly efficient methods used in the diagnosis of pulmonary carcinoma but as an adjunct to be used in conjunction with these methods. It is apparent that sometimes this is the only way in which cancer cells can actually be demonstrated, and unless one can see the neoplastic cells a diagnosis of cancer is never fool proof. Certainly, if a competent cytologist makes a positive diagnosis of pulmonary carcinoma from cells in bronchial secretions, the surgeon can proceed with the operation with as much impunity as he does when the diagnosis is made from a study of a histologic section of tissue removed at biopsy. By the method outlined it is hoped that central, peripheral or upper lobe pulmonary neoplasms will be diagnosed at the time of the first bronchoscopy without losing a valuable month or two waiting for an x-ray shadow to increase or decrease in intensity in order to be certain that a lesion is or is not neoplastic. By that time it might be too late.

SUMMARY

In 30 consecutive cases of primary pulmonary carcinoma, bronchial secretions were stained by the Papanicolaou technic. Cancer cells were demonstrated in 22 cases, or 73 per cent. In the same series a positive morphologic diagnosis, from a study of tissue removed endoscopically, was obtained in 11 cases, or 36 per cent. Cancer cells were present in the secretions from 7 cases in which bronchoscopy was negative.

Sputums were examined from 5 cases in which cancer cells were present in bronchial secretions, and in only 1 of these were neoplastic cells found. We therefore believe that examination of bronchial secretions for tumor cells is superior to examination of sputum.

The method is presented not as a substitute for but as an adjunct to the means already employed in the diagnosis of pulmonary carcinoma. It is particularly useful in cases in which the tumor is located at the periphery of the lung or in the upper lobe.

1530 Locust Street, Philadelphia 2.
Jefferson Hospital, Philadelphia 7.

Clinical Notes, Suggestions and New Instruments

TOXIC PHENOBARBITAL REACTION COMPLICATING MYOCARDIAL INFARCTION

SIGMUND S. WINTON, Ph.D., M.D.
Chicago

Since the introduction of phenobarbital in medical practice in 1911 reports have appeared in the literature warning that the use of this drug is not attended entirely without danger. Considering its popularity as a sedative, hypnotic and anticonvulsant, the reports on its toxicity have indeed been relatively few. The reason for this meager literature on the subject is the fact that many of the mild reactions have been overlooked or unreported, and in the more toxic reactions often no association between the severe constitutional upset and a chemical rash has been suspected. Furthermore, recognition of a toxic manifestation is difficult, since often the patient fails to give a history of barbiturate sensitivity; the character of the rash and its distribution are not specific, and the various tests suggested by some workers[1] have failed in many instances to prove the presence of drug sensitivity in such patients.[2]

In 1912 Loewe[3] reported 3 cases of phenobarbital toxicity, describing a generalized cutaneous eruption without systemic reaction and disappearance of the rash on withdrawal of the drug. In contrast to such relatively mild reactions and uneventful recoveries, deaths following severe manifestations of phenobarbital toxicity when therapeutic doses were employed have been reported.[4]

Dr. Maurice Oppenheimer (dermatologist) confirmed the diagnosis in this case.

1. Haubrish, B. P.: Phenobarbital Poisoning, New England J. Med. 211: 264 (Aug. 9) 1934. Menninger.[5]

2. Novy, F. G.: Drug Eruption Due to the Barbiturates, California & West. Med. 48: 324 (May) 1938. Hull, B. P.: Hypersusceptibility to Basal Anesthetics, Brit. M. J. 2: 1199 (Dec. 10) 1938. Moss and Long.[6]

3. Loewe, S.: Klinische Erfahrungen mit Luminal, Deutsche med. Wchnschr. 38: 947 (April) 1912.

4. Sexton, D. L.; Pike, G. M., and Nielson, A.: Exfoliative Dermatitis and Death Due to Phenobarbital, J. A. M. A. 116: 700 (Feb. 22) 1941. Chavany and Vannier.[9] Wile and Benson.[7] Poole.[8] Winer and Baer.[11] Scarlet and Macnab.[10] Hueber.[12]

The present case report reemphasizes the fact that phenobarbital medication in therapeutic doses may be attended with some danger of drug reaction and of possible fatal outcome. Despite a severe toxic phenobarbital reaction in the presence of a recent myocardial infarction, the patient survived. A review of the literature reveals that in the majority of fatal cases bronchopneumonia was the cardinal finding at necropsy. In the present case bronchopneumonia was recognized early and treated with large doses of penicillin.

REPORT OF CASE

H. S., a white man aged 61, seen Sept. 20, 1944, was complaining of progressive dyspnea, fatigue and precordial pain on exertion. His appetite was good. There was no weight loss and no change in bowel or urinary habits. An electrocardiogram taken at that time was normal, and other laboratory tests were within accepted normal limits. There were no psychosomatic factors present in his history to explain the symptoms. On the basis of his age and symptoms a diagnosis of chronic coronary insufficiency was made, and the patient was treated conservatively with increasing rest periods, aminophylline 0.195 Gm. (3 grains) four times daily and glyceryl trinitate 0.43 mg. (1/150 grain) as conditions indicated. He carried on with his work in a limited way quite comfortably and with few symptoms. He was not seen for six months prior to Aug. 21, 1945, when he presented new and striking changes.

He stated that three days previously he had been awakened in the early morning with a sharp pain in the middle of his chest. The pain was at first excruciating in character, then became less intense and radiated across his chest and up to his jaw but not down his arms. He remained in bed for several hours until the pain subsided a little and returned to his work. The dyspnea and fatigue caused by standing on his feet forced him to lie down for several hours at a time. He continued working in this way for three days and finally came in for advice.

On examination he appeared pale and mildly dyspneic. His pulse rate was 100 per minute, regular and of poor quality; blood pressure was 130/80, temperature 99.8 F. and respiratory rate 25 per minute. There was neither cervical venous engorgement, peripheral edema nor enlargement of the liver. The bases of the lungs presented a few moist rales. The heart tones were regular and faint. There was no friction rub and no cardiac enlargement to percussion. An electrocardiogram taken immediately showed the presence of a typical posterior wall infarct.

The patient was placed on the usual conservative treatment under the care of a trained nurse, who was instructed to massage his extremities and administer mild passive exercise twice daily. Papaverine 0.130 Gm. (2 grains) four times daily and phenobarbital 0.016 Gm. (1/4 grain) three times daily were the only drugs used. After twenty-four hours of complete bed rest the pulse dropped to 85 beats per minute, the respirations to 18, and the rales in his lungs disappeared. Blood pressure and temperature remained unaltered. Two days later he became restless and the phenobarbital was increased to 0.032 Gm. (1/2 grain) per dose. For the succeeding three weeks he was progressing very well, and apart from the electrocardiogram showing a healing myocardial infarct all other signs had disappeared. At this time the nurse reported the appearance of several small macular spots on his abdomen and renewed restlessness. Examination of the rash showed several discrete oval erythematous macules blanching on pressure. His temperature had risen to 100 F., the pulse rate to 95 and the respiratory rate to 25 per minute. Since the appearance of the rash suggested a drug reaction, phenobarbital was discontinued and fluids were moderately increased. Careful questioning elicited a vague history of phenobarbital sensitivity some years before.

Late the same evening the patient's face became swollen; his eyelids were edematous and were stuck together by a thick, purulent exudate. There was a severe conjunctivitis and corneal injection. The rash had spread over his entire chest and the extensor surfaces of his arms and legs as well as the palms of his hands and soles of his feet. The next morning his entire body, including his bald scalp and the external canals of his ears, was covered with the rash, which now became dark red and hemorrhagic in appearance. His lips became intensely swollen and cyanotic, the tongue was beefy red and painful, the buccal membranes and pharynx were edematous and covered with several small areas of dirty gray exudate, and there was a profuse, bloody discharge exuding from the mouth. There was no cervical adenopathy, and neither spleen nor liver was palpable. His temperature had risen to 104 F., pulse rate to 100 and respiratory rate to 28. He was very restless and complained of inability to swallow water.

The patient was admitted to the hospital, where he was immediately given 5 per cent glucose intravenously because of his dehydration and toxemia. In view of the severe eye and oral inflammation as well as a high white blood cell count and a high polymorphonuclear count in the differential, intensive penicillin treatment was started with the intravenous fluid; 2,000 cc. of 5 per cent glucose was given in twenty-four hours, to which 100,000 units of sodium penicillin was added. In addition to this he received 25,000 units of penicillin intramuscularly every three hours. On admission urinalysis revealed specific gravity 1.022, albumin and sugar absent, 6 to 8 white blood cells and 4 to 5 red blood cells per high power field; there were no casts. Red blood cells numbered 4.45 million, white blood cells 14,750, hemoglobin 85 per cent, polymorphonuclears 82 per cent, lymphocytes 17 per cent, basophils 1 per cent. The platelet count was 200,000, the sedimentation rate 25 (Westergren method). The Kahn reaction was negative. Throat cultures showed a few diphtheroids, staphylococci and diplococci. Blood culture was sterile.

The temperature was 103.4 F., pulse rate 96 and respiratory rate 30 per minute. The treatment for the succeeding forty-eight hours consisted in administering intravenous 5 per cent glucose in saline solution (2,000 cc. in twenty-four hours) with penicillin therapy as mentioned. The patient's eyes were treated with warm, moist boric acid compresses; the buccal membranes were swabbed with 3 per cent hydrogen peroxide; a gargle of 1:10,000 potassium permanganate solution and gentian violet 1 per cent was applied to the raw surfaces of the lips. Vitamin B complex and 100 mg. of ascorbic acid were given intramuscularly daily. In twenty-four hours the temperature dropped to 102 F. but returned to 103.4 F. by the next day. Penicillin was discontinued and the patient was treated symptomatically only.

The general clinical condition at this time appeared worse; the rash became hemorrhagic, hemorrhagic bullae appeared around the nipples and the lips became more swollen, almost grotesque in appearance, with large desquamated, bleeding areas. The urine showed an increase in red blood cells. By the fourth day of hospitalization the patient felt a little better, although his temperature was 101.8 F., pulse rate 96 and respiratory rate 25. He was now able to take water and nourishing fluids by mouth. By the sixth day the temperature had dropped to 98.6 F., pulse rate 88 and respiratory rate 20. The urine showed only 1 red blood cell and 2 to 3 white blood cells per high power field. The white blood cell count had steadily dropped to 6,000, with 66 per cent polymorphonuclears, 33 per cent lymphocytes and 1 eosinophil. The lips and oral cavity showed improvement, and the rash became brownish in appearance. By the seventh day, however, the patient took a turn for the worse. His temperature began to rise, and examination of his lungs revealed scattered areas of crackling rales with areas of dulness to percussion. He was again placed on penicillin 25,000 units every three hours for two days. His temperature quickly returned to normal and all chest signs disappeared. The course of his illness became uneventful thereafter. Temperature, pulse and respiration remained normal. All urinary abnormalities disappeared. The rash and edema disappeared from his face and scalp; his ears and lips assumed a normal appearance. After one month the patient was able to get out of bed for short periods and the electrocardiogram showed evidence of complete restitution.

During his entire severe illness resulting from the phenobarbital reaction there had been no serious alteration in his cardiac condition. Nine weeks from the time the infarct first developed the patient was able to take limited exercise, such as short walks, without exhibiting signs of cardiac insufficiency. Only a fading, brownish, desquamating pigmentation was visible on his abdomen at this time.

COMMENT

It has been roughly estimated that from 1 to 3 per cent of persons taking therapeutic doses of phenobarbital develop a toxic reaction of varying severity.[5] The majority of these patients show a sensitizing reaction characterized by urticarial wheals, itch and disappearance of the cutaneous manifestations on withdrawal of the drug. A relatively smaller group develop toxemia associated either with severe cerebral symptoms[6] or with an erythematous macular rash which may disappear after a variable period or end with terminal bronchopneumonia and death.[7]

Of the various types of toxic skin manifestations reported in the literature, the most commonly encountered is the erythematous maculopapular rash ending in exfoliation. This type was first described by Hamilton, Geiger and Roth[8] in 1926. Of the 41 cases collected by Menninger[5] up to 1928 the majority developed this type of cutaneous eruption and, following a protracted period of illness, all survived. In 1929 Chavany and Vannier[9] reported the first 2 deaths attributable to phenobarbital intolerance. In both cases a generalized exfoliative dermatitis and severe toxemia were described. Scarlet and Macnab,[10] in a systematic search of the literature up to 1935, listed 408 deaths as being due to barbiturate poisoning, of which only 6 were caused by phenobarbital taken in therapeutic doses. Since this survey was made, other cases of exfoliative dermatitis with fatal outcome have been reported.[11]

A less common type of toxic cutaneous eruption is the hemorrhagic rash first described by Heuber[12] in 1919, later by Haxthausen[13] and more recently by Moss and Long.[14]

Following administration of the drug, reactions may appear as early as twenty-four hours[6] or as late as six months.[15] The amount of the drug required to produce a reaction varies greatly from case to case, with doses ranging from 0.016 Gm. (¼ grain) three times a day to 0.097 Gm. (1½ grains) once daily before bedtime.

The diagnosis of a toxic phenobarbital reaction is often difficult to prove, even when strong circumstantial evidence implicates the drug. Administration of the drug after recovery has failed to reproduce the rash in many instances.[5] Patch tests have not been successful[14] and intracutaneous tests recommended by Haubrish[1] and Menninger[5] have likewise failed to be of any real value.[14]

In the present case phenobarbital was given in 0.016 Gm. (¼ grain) and later in 0.032 Gm. (½ grain) doses three times daily for three weeks, or a total dose of 2.2 Gm. (33 grains) before the first signs of drug sensitivity were noticed. The sudden rise in temperature and the severe edema of the face made their first appearance at the time the rash became evident. The stomatitis, pharyngitis and conjunctivitis, reported in only a small percentage of the more severe toxic reactions, appeared about ten hours following the rash, which at this time became hemorrhagic in character and typical of the eruption described by Moss and Long.[14] The leukocyte count was 14,750, with 82 per cent polymorphonuclears. Reports in the literature shows that the white blood cell count may vary from 6,000 to 25,000 and apparently is not proportional to the severity of the toxic reaction.[5] Eosinophilia has been reported.[16] The urine in the present case showed 4 to 5 red blood cells in the initial stages of the reaction and increased to 15 cells on later occasions. This might indicate the presence of small hemorrhages in the kidneys and may have been part of the general hemorrhagic reaction. One one occasion there was a shower of pus cells in the urine, which cleared up spontaneously without medication in twenty-four hours. It is doubtful whether the large doses of penicillin administered in the first few days altered the clinical course appreciably, since there was only a 1.2 degree F. drop in temperature in twenty-four hours and a return to the admission temperature of 103.4 F. in spite of continued administration of penicillin. However, when the patient began to show signs of early pneumonia by the seventh day of his illness, penicillin, in all likelihood, was the one specific agent which tipped the scales in his favor. In spite of the severe systemic upset, the patient's cardiovascular status was altered little, if any, and healing of the infarct progressed favorably, as shown electrocardiographically and by exercise tolerance tests.

SUMMARY

A severe hemorrhagic cutaneous reaction developed following the use of therapeutic doses of phenobarbital as a sedative in the treatment of a recent myocardial infarction.

2. The rash was accompanied by a constitutional upset characterized by fever, restlessness, leukocytosis, stomatitis, pharyngitis, oral hemorrhages and hematuria.

3. An early bronchopneumonia was recognized in the later stage of the illness and effectively treated with massive doses of penicillin.

1022 Argyle Street.

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SULFANILAMIDE SPRAY FOR PAIN IN TUBERCULOUS LARYNGITIS

MERVIN C. MYERSON, M.D.
New York

Tuberculosis of the larynx is one of the more serious complications of pulmonary tuberculosis. This condition is frequently associated with ulceration and pain; these symptoms prevent the patients from swallowing, so that they lose ground not only because of the disease but also because they do not get sufficient food. It has always been thought that tuberculous ulceration in a larynx was the cause of pain. Recent observations on the effect of sulfanilamide powder sprayed on the ulcerated areas, however, have cast doubt on this assumption. It appears that it is not the tuberculous ulcer which causes the pain but secondary infection of the ulcer by pyogenic organisms, for when the involved area is sprayed with sulfanilamide powder the pain immediately disappears.

In addition to the relief of pain, one is impressed with the cleansing effect of the sulfanilamide powder spray. Ulcerations which were previously moist and covered with exudate become dry and present a pinkish or reddish appearance.

It should be borne in mind that a secondarily infected ulcer may not be the only cause of pain in a tuberculous larynx. Principal among the other lesions which cause pain is perichondritis of one or both arytenoid cartilages. When such a lesion is associated with ulceration of the larynx one cannot hope to eliminate the pain entirely, because only that pain which is caused by an infected ulcer is influenced by the sulfanilamide spray.

The sulfanilamide used in each application of the spray weighs between 5 and 10 grains (0.32 to 0.65 Gm.) Not all the powder which is introduced into the larynx is absorbed; most of it mixes with mucus and exudate and is expectorated. Even if all the powder introduced should be absorbed, it would amount to a relatively small dose. Treatment is carried out by the patient or a physician or nurse. The powder is sprayed into the larynx with a powder atomizer. The tongue is held forward by the patient while compression of the rubber bulb or compressed air forces the fine powder into the larynx. The stem of the atomizer has an adjustable tip which can be bent downward so as to direct the powder spray into the larynx.

A few cases have been treated with sulfathiazole powder and penicillin nebulized with oxygen or in an aqueous solution as a spray. The objection to sulfathiazole is that it cakes because it is not soluble, while the objection to penicillin is that it is more expensive, more difficult to prepare, more difficult to keep and readily contaminated.

It should be emphasized that the use of sulfanilamide in cases of secondarily infected tuberculous ulcerations of the larynx can convert a hopeless case into one in which there is a chance. *As a result of the elimination of pain and the restoration of the ability to swallow,* the patients gain weight and strength, some becoming greatly improved.

A fair percentage of patients with tuberculosis of the larynx do not experience pain. Of the large majority which do, however, more than half are caused by ulceration. A series of 1,000 cases that I[1] studied presented an aggregate of 2,059 lesions. Of these, 476 were ulcerations, while the other pain-producing lesions, principally involving the arytenoids, numbered 437. It should be borne in mind that infiltration, tuberculoma and edema may exist in a tuberculous larynx without causing pain. *Only some infiltrative and edematous lesions of the arytenoids, in addition to ulcers anywhere in the larynx, will cause pain. In the arytenoid region the pain is due to active involvement of the perichondrium.*

Sixty patients with tuberculous ulceration of the larynx have been treated with the sulfanilamide powder spray. Those having ulcerations not associated with perichondritis of the arytenoid cartilages were definitely relieved of pain; they were enabled to eat, gained weight and became generally improved. In 14 cases the condition, which appeared hopeless, became favorable as a result of the sulfanilamide powder spray treatment.

The following cases illustrate the dramatic change which such patients may undergo:

J. S., a man aged 42, presented extensive ulceration of the right lateral fold of the larynx and the stump of the epiglottis. He had lost 8 pounds (3.6 Kg.) during the week prior to examination. Sulfanilamide powder was sprayed into the larynx twice daily. At the end of a week he had gained 10 pounds (4.5 Kg.). He was again able to swallow because the secondary infection of the ulceration was under control.

A most striking case was that of a woman aged 28 who had a generalized miliary invasion of her larynx, with extensive ulceration. There was similar involvement of her entire soft palate. The larynx, especially, was extremely painful. When I saw her she was using a spray of 8 per cent cocaine solution. Employment of the sulfanilamide spray immediately eliminated the need for the cocaine. The patient was able to swallow in comfort.

I do not claim that the use of sulfanilamide powder insures a cure. I feel, however, that many patients who succumb to extensive and active tuberculous disease of the lungs and other organs can be spared much of the pain which is so frequently associated with involvement of the larynx. Some lives will be prolonged, some will be saved; but, whatever the outcome, many will not experience the agonizing pain and the inability to swallow which has always accompanied tuberculous ulcer of the larynx.

136 East Sixty-Fourth Street, New York 21.

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[1] Myerson, Mervin C.: Tuberculosis of the Ear, Nose and Throat, Springfield, Ill., Charles C Thomas, 1944, p. 25.

Council on Foods and Nutrition

ACCEPTED FOODS

The following additional foods have been accepted as conforming to the Rules of the Council on Foods and Nutrition of the American Medical Association for admission to Accepted Foods.

James R. Wilson, M.D., *Secretary.*

PREPARATIONS USED IN THE FEEDING OF INFANTS (*See* Accepted Foods, 1939, p. 156).

Libby, McNeill & Libby, Chicago

Libby's Strained and Homogenized Apples and Prunes contains apples, prune pulp and dextrose.

Analysis (submitted by manufacturer).—Total solids 22.71%, moisture 77.29%, ash 0.38%, ether extract 0.09%, crude fiber 0.57%, protein 0.35%, salt 0.08%, carbohydrate (by difference) 21.33%, iron 1.81 mg. per hundred grams, calcium 16.6 mg. per hundred grams, phosphorus 18.6 mg. per hundred grams, lead less than 1 part per million.

Calories.—89.7 per hundred grams.

Vitamins.—		
Thiamine	trace	
Riboflavin	0.10	mg. per hundred grams
Vitamin C	4.9	mg. per hundred grams
Carotene	0.05	*mg. per hundred grams*

Libby, McNeill & Libby, Chicago

Libby's Strained and Homogenized Peaches, Pears and Apricots contains peaches, pears, apricots, sucrose and dextrose.

Analysis (submitted by manufacturer).—Moisture 83.15%, total solids 16.85%, ash 0.31%, fat 0.15%, protein (N × 6.25) 0.75%, crude fiber 1.25%, total carbohydrates (other than crude fiber, by difference) 14.39%, salt (as sodium chloride) 0.06%, iron 0.45 mg. per hundred grams, copper 0.41 mg. per hundred grams, calcium 10.07 mg. per hundred grams, phosphorus 18.49 mg. per hundred *grams, lead in part per million* not more than 0.2, arsenic in part per million not *more* than 0.1.

Calories.—17.92 per ounce.

Vitamins.—		
Vitamin A, as carotene	0.48	mg. per hundred grams
Vitamin B_1	0.0082	mg. per hundred grams
Vitamin C	0.19	mg. per hundred grams

National Dairy Products Company, Inc., New York City.

Formulac comprises evaporated milk with added fish liver oil distillate, activated *ergosterol*, ascorbic acid, niacin, thiamine hydrochloride, riboflavin, wheat germ oil, *ferric lactate,* copper *sulfate and manganese* sulfate.

Analysis (submitted by manufacturer).—Water 73.8%, protein (nitrogen × 6.38) *6.9%,* butterfat 8.0%, carbohydrate 9.2%, crude fiber none, calcium *0.2%,* phosphorus 0.2%.

Calories.—570 per 14½ ounce can.

Vitamins and Minerals.—	Per Can (14.5 Ounces)
Vitamin A	2,380 U. S. P. units
Vitamin B_1	2.45 mg.
Vitamin B_2 (riboflavin)	2.00 mg.
Niacin	6.50 mg.
Vitamin C (ascorbic acid)	59.80 mg.
Vitamin D	500 U. S. P. units
Iron	11.50 mg.
Copper	2.50 mg.
Manganese	2.30 mg.

S. M. A. Corporation, Division of Wyeth, Inc., Philadelphia.

Cerol contains whole wheat, corn flour, wheat germ, malt syrup, dry *skim milk, dried* brewers' yeast, sodium chloride, tricalcium phosphate, ferric pyrophosphate, thiamine hydrochloride, riboflavin, niacin *amide* and dehydrated whole papaya powder.

Analysis (submitted by manufacturer).—Carbohydrate 71.35%, protein 15.50%, fat 1.20%, ash 4.00% (calcium 0.80%, phosphorus 0.55%, iron *0.035%,* copper 0.002%), crude fiber *1.95%, moisture 6.00%, calcium 887.5 mg.* per *hundred* grams, phosphorus 577.5 mg. per hundred grams, iron 35.0 mg. per hundred grams, copper 1.75 mg. per hundred grams.

Calories.—102 per ounce.

Vitamins.—		
Thiamine	2.10	mg. per hundred grams
Riboflavin	3.15	mg. per hundred grams
Niacin and niacin amide	21.00	mg. per hundred grams

The Gerber Products Company, Fremont, Mich.

Gerber's Chopped Spinach.

Analysis (submitted by manufacturer).—Total solids 5.6%, protein 1.8%, fats (ether extract) 0.3%, crude fiber 0.3%, *carbohydrates (by* difference) 2.0%, ash 1.3%, calcium 0.086%, phosphorus 0.031%, iron 0.0025%.

Calories.—5 per ounce.

Vitamins.—		
Vitamin A equivalent	2,167	I. U. per hundred grams
Thiamine	0.026	mg. per hundred grams
Riboflavin	0.100	mg. per hundred grams
Ascorbic acid	0.6	mg. per hundred grams

THE JOURNAL OF THE
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SATURDAY, APRIL 13, 1946

SENATE HEARINGS ON THE NATIONAL HEALTH PROGRAM

Elsewhere in this issue (page 1021) appears a rather full condensation of the first two days of the hearings on the national health program before the Committee on Education and Labor of the United States Senate which began April 2. Obviously Senators Wagner, Murray and Pepper and Congressman Dingell had organized the first day's session as a sort of conversion and revival meeting, in which the four uplifters would cooperate to bring the doubters promptly to the mourners' bench. Perhaps unfortunately for them, but no doubt fortunately for the people, some agnostics appeared, who tossed doubts and questions that agitated one of the leaders to unholy remonstrances. As might be expected, the newspapers seized on the controversy as the real news of the day; the propaganda of Pepper, the diatribe of Dingell, the weasel words of Wagner and the modulations of Murray failed to find any expression in the public press. By the next day, after Federal Security Administrator Watson Miller expressed his complete approval of compulsory sickness insurance, tendering in the meantime a few encomiums to the medical profession, and after Dr. Mountin of the Public Health Service expressed the official point of view of that branch of the government, the newspapers seem to have lost interest in the proceedings. Readers of The Journal will have to depend on our pages to keep informed as to what goes on.

Attention is called in the digest of the hearings in this issue of The Journal to the forthrightness with which Senator Taft condemned the entire proceedings as a venture in socialism, to the manner in which Senator Smith of New Jersey opposed the slander, innuendo and invective with which Congressman Dingell attacked the medical profession, to the statement of Senator Wayne Morse of Oregon that he felt Oregon and Washington were making a reasonable trial of a voluntary system and that he wanted representatives of those states to appear at the hearings and to the statement of Senator Ellender of Louisiana that he opposes compulsory medicine except as a last resort.

In closing his presentation Senator Pepper offered amendments to the Wagner-Murray-Dingell bill with a view to incorporating in that measure the features of the Pepper maternal and child health bill. He states that he will not push the latter until he finds out what happens to the former.

Dr. Mountin indicated that it would be desirable to place the health functions of the Children's Bureau under the U. S. Public Health Service, whereupon Mr. Watson Miller stated that negotiations have been under way to bring about functional unity in these agencies without apparently taking from the Children's Bureau either autonomy or its appropriation.

Amazingly Senator Murray several times referred to Mr. Watson Miller, the lay administrator who is responsible for health functions in the government, as "Dr. Watson," and apparently Senator Aiken was under the same misapprehension and also referred to him several times as "Dr. Watson." Presumably even the senators feel that health functions are properly problems for medically trained administrators.

Finally Dr. Mountin expressed his belief that medical research and medical education as well are properly functions of the federal government and his own philosophy, which he states is the philosophy of this bill, that "the government ought to lift the costs of illness off of the backs of the sick people and place it on the broad shoulders of society." That after all is the fundamental issue. Is there to be individual responsibility and individual freedom in the American democracy or is the federal government to assume responsibility for all of us and are we to sacrifice our freedom for the kind of service that the federal government can render?

THE NEW ZEALAND EXPERIMENT

New Zealand has been experimenting with a government controlled system of medical care. The New Zealand Social Security Act of 1938 inaugurated a wide range of health and medical benefits which commenced on April 1, 1940 and gradually increased. Under the capitation system a doctor is paid a social security fee for every "head" on his list of patients for the year. A "salaried service system" is a special arrangement of limited extent designed for remote country districts, in which the doctor receives a fixed annual salary. Under the "fee-for-service system" the patient signs a declaration saying he has been treated by a doctor who countersigns the form and makes the claim on the Government Health Department for full settlement of his fee. A "refund system," which is the only one of these methods officially approved by the British Medical Association, provides for full payment of the fee by the patient directly to the doctor and for the recovery by the patient from the Government Post Office of the portion of the fee paid through the social security system. A "token system" enables the patient to pay the difference between the social security allowance and the doctor's fee, the doctor sending in the claim for the remainder.

In a recent survey addressed to 1,500 New Zealand doctors, of whom almost 200 were overseas, about 1,000 replies were received. A majority of the physicians expressed their preference for the refund system, although a considerable number indicated preference for each of the other technics.

The Journal has recently received from a government official in New Zealand, who must be kept anonymous, some information concerning the actual working of the system which it is believed should be made available to American readers. The letter indicates that the islands are having trouble in getting medical personnel; salaries offered approximate 800 pounds a year plus deferred pay of 200 pounds a year, but young doctors "make money too easily today in New Zealand and any recent graduate can put up his plate and start earning immediately at the rate of 2,000 to 3,000 pounds per year." Here is the statement of what has occurred in New Zealand:

> General practitioner services are provided in a number of ways:
>
> (1) About twenty salaried positions have been created in remote and unattractive areas. This is a logical and satisfactory way of dealing with these particular places.
>
> (2). An attempt was made to work a capitation scheme. This was resisted by the profession, and consequently
>
> (3) A fee for service scheme was introduced. The capitation system still survives, but barely so, and is not practiced exclusively by any doctor.
>
> The fee for service scheme again is operated in three ways:
>
> 1. The doctor sees the patient and claims direct from the state, accepting the state fee in full and complete settlement of his charge. The state pays 7/6 per visit or consultation, which sum is increased to 12/6 for night calls or Sunday calls.
>
> 2. The doctor gives the service and sends in his bill in the ordinary way to his patient. When the patient pays, the doctor gives him a statement setting out the number of attendances, which enables the patient in turn to collect from the state on the basis of 7/6 per attendance. Doctors working this scheme as a general rule continue to charge 10/6 or 12/6 per visit or consultation.
>
> 3. The doctor by happy compromise gets the best of both systems by claiming direct on the state for 7/6 and collecting 3/– cash from the patient which he can put into his pocket and possibly conceal from the tax authorities.
>
> The system, of course, is shocking, and it is not surprising that the standards of medical practice have deteriorated. Doctors are not limited as to numbers of patients and some are making round about £10,000 per annum, which means they see 80 to 90 patients daily for six days a week for eleven months in the year. There are all the evils of hurried medicine, overvisiting and overprescribing. Altogether New Zealand affords a wonderful example to the rest of the world of how not to do it.

One might hope that our American statesmen who are trying to rush the people of the United States into government controlled medicine could heed the warnings that come from parts of the world where free people have been regimented into the kind of schemes that they propose for us. Unfortunately Senators Murray and Wagner seem to be little concerned with the nature of the medical service that will be rendered, with the progress of medical science or with the type of person who will choose medicine as a profession in the future. They crave only the endorsement of those who would destroy the American democracy and lead us into socialism or communism. They seem to look on medical care as the stalking horse that herds the unthinking into the corral where freedom disappears.

ANTITOXIC ACTION OF PENICILLIN

Supplementing their earlier work with meningococcus endotoxin[1] Miller and his associates[2] of the University of Chicago Department of Medicine report that penicillin has an equally effective neutralizing action against gonococcus endotoxin. The endotoxin used in their tests was prepared from five strains of gonococcus grown for eighteen hours on an agar medium containing casein digest and cystine. The organisms were repeatedly washed in saline solution, suspended in distilled water and then allowed to autolyze for six hours at room temperature, followed by fourteen hours' storage at 4 C. The autolysate was then neutralized, heat sterilized (60 C. for thirty minutes) and its concentration adjusted to about 1 per cent solids. White mice weighing 18 to 20 Gm. were injected intraperitoneally with graded doses (0.1 to 0.5 cc.) of this 1 per cent endotoxin. Half of each group served as untreated controls. The other half were each given eight subcutaneous injections of 150 units of penicillin. The injections were usually given ninety and forty-five minutes before and one, three, five, nine, twenty and twenty-four hours after injection of the endotoxin. In a typical experiment 22 control mice were each injected with 0.1 cc. of endotoxin. Of these, 15 died, a mortality rate of 68 per cent. Of 22 mice treated with penicillin similarly injected, only 2 died, a mortality of but 9 per cent.

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[1] Boor, A. K., and Miller, C. P.: Science **102**: 427 (Oct. 26) 1945.

[2] Miller, C. P., and Boor, A. K.: Proc. Soc. Exper. Biol. & Med. **61**: 18 (Jan.) 1946.

Less spectacular therapeutic effects were demonstrated with multiple doses of the endotoxin. Thus of 22 control mice injected with from 0.4 to 0.5 cc. of endotoxin 21 died. Of 22 penicillin treated mice given the same doses only 12 died. The combined results of all their groups, totaling 176 control and 210 penicillin treated mice, showed an average mortality rate of 76.7 per cent for the control mice as contrasted with but 36.5 per cent for mice receiving penicillin treatment. Other substances, such as saline solution and tryptic digest of casein, repeatedly injected in place of penicillin failed to influence the lethal action of the endotoxin.

A satisfactory theory has not yet been developed to account for the antiendotoxin action of penicillin. The action presumably is more complex than a simple conjugation of toxin and antitoxin.

IMPROVING CHILD CARE

A recent bulletin from the Metropolitan Life Insurance Company characterizes the past thirty-five years as "the golden age of child health." The statistics cited are a startling contrast to the sad pictures painted by the propagandists who want to communize the care of children in the United States. They talk about hundreds of thousands of unnecessary deaths. The statisticians say that the decrease in mortality at the ages of 1 to 14 among white children was close to 80 per cent in the period between 1910 and 1945. The bureaucrats who want to concentrate the care of children in the Children's Bureau speak only of inadequacies in the prevention of infectious diseases. The statisticians say that the death rate from measles, scarlet fever, whooping cough and diphtheria declined over 90 per cent in the period reviewed.

The chief factor in the control of disease is not administration or money; it is the research that reveals the cause, the method of dissemination, the method of prevention and an effective method of treatment. Mortality from diphtheria decreased 97 per cent in the last thirty-five years because we found the answers to these questions for diphtheria. The death rates from diarrhea and inflammation of the bowels among children declined 95 per cent because we developed pasteurization of milk, pure water and food supplies and modern refrigeration and educated the mothers in how to protect the child against the hazards of these infections. For every child that now dies from this cause there were twenty such deaths thirty-five years ago. True, some children still die from infections of the bowel during infancy. Unfortunately some of these children occasionally die even in the finest hospitals and institutions, because human beings occasionally become careless in caring for children. The hazard is greater when a careless person is caring for 20 babies than when an intelligent mother is caring for her own baby.

The value of scientific statistics is the manner in which they point the way to areas of need in diminishing sickness and death rates. The death rates from pneumonia and influenza declined only to one sixth of the rate prevailing previously because we did not have until recently specific methods of prevention and treatment. A much greater decline may be anticipated in the next generation. The death rates from accidents declined only about one half. Accidents have first place as a cause of death among children at ages of 1 to 14. Automobile accidents are the only important cause that shows a higher death rate now than prevailed thirty-five years ago. Yet even the death rates from automobile accidents among children have been decreasing steadily since 1930. The prevention of unnecessary deaths from accidents demands a continuous campaign of education against carelessness and thoughtlessness. Perhaps it demands also a rise in the general intelligence level of mankind.

Current Comment

THE ARMY MEDICAL LIBRARY

Since 1836, when the Army Medical Library was first established, it has grown and developed, both in the contents and in its functions. Today it includes more than a million items, of which more than 500,000 are bound volumes. Its special collection includes a medical art collection with some 10,000 items and references to more than 50,000 portraits and illustrations. It houses 513 medical incunabula, and of some early published medical works it has the only copy known. Its contributions to medical bibliography, especially the Index Catalogue, have been among the most significant of the factors associated with the tremendous advance of medical science not only in the United States but throughout the world. In 1941 Congress passed a bill authorizing a new library and museum to be located on Capitol Hill. After extensive consultations with the librarian, drawings were made by the architects and a site has been selected for a new Army Medical Library Building on Capitol Hill adjoining the Library of Congress. This structure has a definite place among the projects outlined by the Fine Arts Commission of the District of Columbia as a part of the postwar program. At present the library is directed by Col. Leon L. Gardner, and Mr. Wyllis E. Wright is the librarian. No doubt Congress will soon be asked to make the necessary appropriation for completing the construction of the new library and for the transfer of its contents to the new building. A recent service by the Army Medical Library is the official publication of the current list of medical literature, which presents each week a general view of the contents of the periodicals received in the library. This has been an invaluable service to those in the field of medical research. Physicians who are interested in continuing the advance of medical science in this country will do well to support in every way possible the speeding of the completion of the library so that its services may be more and more available, not only to the research worker, but to the practicing physician.

DIISOPROPYL FLUOROPHOSPHATE (DFP)

Among the interesting subjects discussed at the recent session of the Federation of American Societies for Experimental Biology at Atlantic City was diisopropyl fluorophosphate (DFP). Investigators from the Chemical Warfare Service at the Edgewood Arsenal and from various collaborating institutions participated in a symposium devoted to the current status of this interesting compound. Diisopropyl fluorophosphate appears to produce an irreversible inhibition of the enzyme cholinesterase, in contrast to the reversible inhibition produced by physostigmine and neostigmine. This property makes it interesting to the neurophysiologist as a tool for determining the role acetylcholine and its hydrolyzing enzyme may play in conduction of the nerve impulse. Two groups of workers have employed it for this purpose, obtaining apparently discrepant results. Consequently final decision as to this fundamental question cannot be made at the moment. In addition to its role as a tool in research, its potential usefulness as a therapeutic agent was also discussed, particularly with reference to myasthenia gravis and glaucoma. Injected intramuscularly into patients with myasthenia gravis, it relieved the weakness of such patients for longer periods than neostigmine, but not to as high a degree. Instilled locally in human eyes, it produces a prolonged miosis with a decrease in intraocular tension for from four to eight days. Used for patients with glaucoma it was frequently effective when both physostigmine and pilocarpine failed. These preliminary results do not permit a conclusion as to its ultimate role in the medical treatment of either of these conditions but give great promise that a valuable therapeutic agent may be the by-product of research undertaken for strictly military purposes.

ASSOCIATED MEDICAL CARE PLANS

Under the Organization Section in this issue (p. 1036) of The Journal appear the details of the incorporation of Associated Medical Care Plans. Thus the official step has been taken to make effective the resolution adopted by the House of Delegates at the last annual session of the American Medical Association leading to the coordination of existing plans into a national plan and at the same time permitting to the individual state plans autonomy in their operations. Arrangements have already been made for sessions of the board of directors of the corporation so that it may begin actual functioning in the near future. Physicians who are interested in the extension of the voluntary medical care plans should familiarize themselves with the nature of this organization and its method of functioning.

SEWAGE POLLUTION AND POLIOMYELITIS

Although there is some difference of opinion on the relation between the sewage pollution of streams and the spread of infantile paralysis, the desirability of eliminating stream pollution is unquestionable. The Izaak Walton League of America has issued a pamphlet[1] written by Dr. Edward A. Piszczek, director of the Cook County Department of Public Health, on the apparent relation between pollution of the Desplaines River in northern Illinois and the development of poliomyelitis. The Izaak Walton League thus joins with the National Foundation for Infantile Paralysis in aiming to bring about a speedy abatement of sewage pollution of streams. Specifically the league endorses the Clean Streams Bill introduced into the House of Representatives and the Senate. Without evaluating the technical details of these measures, the medical profession can endorse the principle of maintaining the purity of the streams of this country.

BLOOD CIRCULATION OF PROMINENT ATHLETES

Arne Andersson and Gunder Hägg, both holders of world's records in long distance running, were subjected to detailed examination of the circulation. Gunder Hägg is a 24 year old Swede who has broken seven world's records for various distances from 1,500 meters to 5,000 meters. Arne Andersson was a rival and practically equally great runner, who disputed with Hägg principally in the summer of 1944. The examination of Hägg was made on Oct. 2, 1942 and of Andersson on Feb. 5, 1944. Nylin's[1] report of the investigations indicated that both could be considered healthy and without any defect whatever from the clinical point of view. Both exhibited a high stroke volume and a somewhat greater heart volume at rest, which resulted in a normal index of heart volume over stroke volume of 10.8 for Hägg and 10.2 for Andersson. Hägg's examination revealed an elastic heart which reacted with decrease in volume in Valsalva's experiments, an extreme respiratory arrhythmia after heavy work and remarkably normal oxygen after heavy work. In Andersson's case the blood pressure rose to remarkably high levels with heavy work and the heart rate to a maximum of 198 beats per minute. Nylin reported that the results of these examinations did not definitely explain the remarkable performance of the athletes under study though there is ample evidence of good training. His tentative conclusion is that these athletes differ from ordinary healthy persons by reason of an extremely well developed technic and judgment. This theory cannot be accepted until other and more extensive comparative studies on athletes have been made, but it will be extremely interesting to determine whether exceptional athletic ability like that of Hägg and of Andersson is the result of innate physical attributes or primarily of special training measures.

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[1] Pollution and Polio, the Izaak Walton League of America, Chicago 2.

[1] Nylin, Gustav: Investigations on the Blood Circulation of Gunder Hägg and Arne Andersson, Cardiologia 9:313, 1945.

MEDICINE AND THE WAR

NAVY

NAVAL MEDICAL OFFICERS COMMENDED

Secretary of the Navy James Forrestal recently commended a number of key personnel in the Bureau of Medicine and Surgery for meritorious performance of duty during the war period.

Medical officers who have been commended include:

Capt. Robert A. Bell (MC), U.S.N. (Spearville, Kan.) for formulation of policies concerning physical standards with relation to efficient mobilization and maximum utilization of naval personnel.

Comdr. S. A. Britten (MC), U.S.N.R. (Syracuse, N. Y.), officer in charge of the Tuberculosis Control Section and organizer of an effective tuberculosis control program in the Navy.

Capt. James B. Butler (MC), U.S.N. (Washington, D. C.), who was commended for his supervision of the design of medical facilities ashore and afloat as head of the Design and Construction Branch, Planning Division.

Comdr. J. W. Ferree (MC), U.S.N.R. (New York) for outstanding performance of duty while serving as officer in charge of venereal disease control.

Comdr. H. P. Hopkins (MC), U.S.N.R. (Chatham, Mass.), officer in charge of the Section of Tropical Disease Control, who was responsible for development and testing of new equipment and methods for insect control.

Capt. Frederick R. Lang (MC), U.S.N.R. (New York), officer in charge of the Division of Medical Statistics. His commendation was given for outstanding performance of duty as assistant naval attache, assistant attache for air and staff medical officer at the United States embassies at Kuibyshev and Moscow from April 3, 1942 to July 27, 1944. "During bombing attacks," the commendation reads, "he courageously and efficiently treated the wounded under fire and, determined to further research and advance the effectiveness of his profession, persisted in his medical efforts until he contracted typhus."

Capt. Howard H. Montgomery (MC), U.S.N., (Washington, D. C.,) who was cited for outstanding performance of duty, first, as head of the Division of Physical Requirements and Medical Records and, later, as organizer of the Navy's medical rehabilitation program.

Lieut. Comdr. Mary D. Pettit (MC), (W), U.S.N.R. (Albany, N. Y.), who served as special assistant to the Surgeon General on problems affecting the Women's Reserve.

Comdr. Henry A. Schroeder (MC), U.S.N.R. (Bethesda, Md.), who, as a medical liaison officer between the Bureau of Aeronautics and the Bureau of Medicine and Surgery was instrumental in the development and production of antiblackout suits for naval aviators.

NEW YORK UNIVERSITY COLLEGE OF MEDICINE CITED

A Certificate of Commendation for service in the war effort was recently awarded to the New York University College of Medicine by the Navy Department. The citation accompanying the award, which was presented to Acting Dean Sheehan by Vice Admiral Ross T. McIntire, Surgeon General of the Navy, said "The Bureau of Medicine and Surgery wishes to take this opportunity to congratulate you and the members of your faculty for your outstanding contribution to the war effort and to medical education. . . . The Medical Department of the Navy greatly appreciates your continuous cooperation and assistance in all matters of vital importance to this bureau. I feel that medical schools have given a most distinguished service which has had considerable effect on the war effort. . . ." "I am proud," he continued, "to present to you a Certificate of Commendation. I want you to know that the personnel of the Medical Department of the Navy joins me in expressing sincere appreciation of your splendid cooperation and assistance in handling our medical personnel war problems."

NAVY AWARDS AND COMMENDATIONS

Captain William Drew Small

The Legion of Merit was recently awarded to Capt. William D. Small, formerly of Scarsdale, N. Y., "for meritorious conduct in the performance of outstanding service in the Logistics Division, on the staff of the commander in chief, United States Pacific Fleet and Pacific Ocean areas, from Dec. 19, 1943 to Sept. 1, 1945. As assistant to the chief of the medical section until Jan. 19, 1945, and subsequently as deputy fleet medical officer and chief of the medical section, Captain Small displayed outstanding administrative ability, initiative and diligence in the formulation of policies concerning care and treatment of the sick and injured and the health of personnel, and in the planning and execution of a program for medical supply, evacuation and hospitalization of casualties, and epidemic disease control in the Pacific. His professional excellence and devotion to duty were material contributing factors in the successful prosecution of the war against the Japanese Empire and were at all times in keeping with the highest traditions of the United States Naval Service." Dr. Small graduated from Bowdoin Medical School, Brunswick, Maine, in 1918 and entered the service April 8, 1919.

Captain Francis J. Braceland

The Legion of Merit was recently presented to Capt. Francis J. Braceland for "wartime services to the Bureau of Medicine and Surgery." The citation accompanying the award specified "exceptionally meritorious conduct in the performance of outstanding services to the government of the United States as special assistant in psychiatry to the Surgeon General of the Navy and later as chief of the division of neuropsychiatry, Bureau of Medicine and Surgery, from January 1942 to October 1945. Possessing an international reputation in the field of psychiatry, Captain Braceland was responsible for the procurement and training of medical officers and enlisted personnel to adequately establish psychiatric services to all naval hospitals in the United States and the advanced bases. His medical knowledge and ability contributed immeasurably to the welfare of the Naval Medical Corps during these critical years." Dr. Braceland graduated from Jefferson Medical College of Philadelphia in 1930 and entered the service in June 1942.

Lieutenant Commander Russell M. Jensen

Lieut. Comdr. Russell M. Jensen in the U. S. Naval Reserve on inactive duty was recently awarded the Navy Unit Commendation for services rendered on Dec. 7, 1941 at Pearl Harbor. The commendation reads "By virtue of your services in the unit during the above period (Dec. 7, 1941) you are hereby authorized to wear the Navy Unit Commendation Ribbon, which is transferred herewith. This authorization has been made a part of your official record in the Bureau of Naval Personnel. The commendation is used by direction of Chief of Naval Personnel W. C. Palmer Jr., Lieutenant Commander, U.S.N.R." Dr. Jensen was on duty in the naval hospital at Pearl Harbor at the time of the attack by the Japanese and remained in Hawaii and the Midway Islands until October 1943, when he was transferred to the United States for duty at the Naval Hospital, Oceanside, Calif. He graduated from Northwestern University Medical School, Chicago, in 1936 and entered the service Feb. 4, 1941

SWEDISH NAVAL MEDICAL CORPS OFFICER VISITS UNITED STATES

Commodore Herbert Westermark, medical inspector of the Swedish naval medical corps, recently spent a month in the United States studying and inspecting naval medical facilities.

ORGANIZATION SECTION

THE WAGNER-MURRAY-DINGELL BILL

Hearings on S. 1606—To Provide for a National Health Program

(Note.—*This is a condensation of the verbatim report of the hearings.*—Ed.)

United States Senate, Committee on Education and Labor.
April 2, 1946.

The Honorable James E. Murray, (Chairman) Presiding

Present: Senators Murray, Thomas, Pepper, Wagner, Taft and Smith.

Also Present: The Honorable John F. Dingell, a Representative in Congress from the state of Michigan.

Senator Murray: I wish to insert in the record of the hearings the President's Health Message, the National Health Bill, S. 1606, copies of correspondence between President Truman and myself relative to certain amendments proposed by Mr. William Green, president of the American Federation of Labor, and fourthly, reports on the National Health Bill from a number of federal agencies including the Bureau of the Budget, the Federal Security Administrator and the Secretary of Commerce. Seven years ago, in April 1939, this committee had referred to it the first comprehensive bill for a national health program, S. 1620, introduced on Feb. 28, 1939 by the distinguished Senator from New York, Mr. Robert F. Wagner. Through a subcommittee, of which I had the honor to be chairman, we held extensive hearings, heard many witnesses and received many statements on health conditions, needs and proposals. Early in August 1939 I made a preliminary report for the committee in which I summarized the results of the hearings on S. 1620. It was already late in the Congressional session and there were some unresolved problems concerning the bill. Consequently the committee could only record its intention to report out an amended bill at the next session of the Congress.

We were convinced at the end of 1939 that there were large unmet health needs in this country, that the federal government had an obligation to help meet those needs, and that this could and would be done.

Our intention to proceed with national health legislation early in 1940 was, however, frustrated by a catastrophic event. The war in Europe was gathering momentum and its threats to our national security were becoming clearer and clearer. As the clouds of war rolled over us and finally engulfed us, comprehensive national health legislation had to be laid aside, to await the end of the war.

We did consider a limited program in 1940. The National Hospital Act of that year, S. 3230, introduced by Senators Wagner and George, providing federal grants for the construction of some needed hospitals and making limited grants toward their maintenance, was considered. After hearings on the bill, I reported it favorably from this committee and it was passed by the Senate. Unfortunately, it failed to receive active attention in the House of Representatives.

Between 1941 and 1945 we have had many health measures before us dealing with special problems. Other bills containing health programs to be developed as parts of social security and related programs were also pending before other committees of the Senate.

During the war years our Special Subcommittee on Wartime Health and Education did a magnificent job, studying and reporting on special problems and needs precipitated by the war. The nation owes a real debt of gratitude to Senator Pepper, chairman of that subcommittee, and to the other members, Senators Thomas, Tunnell, LaFollette and Wherry, for the comprehensive, thorough and penetrating work they have done. More recently Senator Pepper and other members of the Committee on Education and Labor have also carried forward the work on health problems through our legislative subcommittee on public health.

The hearings held by the subcommittees and the reports prepared by Senator Pepper and his able committee will long continue to be invaluable sources of information and helpful guides for constructive health plans. The public health laws of the United States were completely recodified in 1944, making somewhat more ample provisions for various public health programs.

Last year this committee had before it a bill proposing the first step toward a comprehensive national health program, including federal grants to survey hospitals and public health centers, to plan the construction of additional facilities and to assist in such construction. That bill, S. 191, introduced on Jan. 10, 1945 by Senators Hill and Burton, was considered in public hearings extensively and extensively revised and reported favorably by this committee on Oct. 30, 1945 and passed by the Senate Dec. 11, 1945. It is now being considered by the Committee on Interstate and Foreign Commerce in the House.

Thus it is clear that extensive studies and deliberations have been devoted to national health legislation over a period of seven years. Many important bills have been considered and some have been or are in the process of being enacted. Thus while this is true it is also true that most of the main health problems, the basic problems that clamored for attention and action in 1939, are still unsolved. The principal unmet health needs of the last years before the war are still unmet and the war has made some of them more serious and more acute.

The bill which is now before us transcends all of the earlier bills in importance. It represents a logical culmination of the vast amount of work already done in planning for the nation's health. It offers a constructive program for assuring to all of the population the medical care that we all look forward to having in the future.

On November 19 President Truman submitted to the Congress his recommendation for a comprehensive and modern health program for the nation, consisting of five major parts, each of which contributes to all of the others.

The five parts are (1) federal grants for construction of hospitals and related facilities, (2) expansion of public health, maternity and child health services, (3) federal grants for medical education and research, (4) establishment of a national social insurance system for the prepayment of medical costs and (5) expansion of our present social insurance systems to furnish protection against loss of wages from sickness and disability.

On the same day the National Health Bill, S. 1606, was introduced in the Senate by Senator Wagner and myself and in the House of Representatives by Representative John F. Dingell of Michigan. This bill provides for three of the five points of the President's program, namely expansion of public health, maternity and child health services, more adequate funds for medical education and research and a system of prepaid medical costs. Federal aid for the construction of hospitals and related facilities, the first of the President's five points, had already been provided for in the Hospital Survey and Construction Act which passed the Senate in December 1945 and is now before the House. Insurance benefits to compensate for loss of wages during periods of sickness and disability, the President's fifth point, is provided for in the general Social Security Bill now pending before the Finance Committee of the Senate and the Ways and Means Committee of the House.

Thus far hearings have been scheduled only for the month of April. The witnesses who will appear during the course of these hearings are representatives of national organizations, both for and against the bill, and spokesmen of the federal agencies most directly concerned with the health program.

Arrangements have already been made with the Legislative Reference Service of the Library of Congress to have a research analyst prepare a weekly summary of all testimony and written statements. These summaries will be available to the public and will also facilitate committee consideration of the views and recommendations presented to us.

During recent years there has been extensive, and sometimes intensive, controversy over the question of whether we should have compulsory health insurance. These hearings will provide a new occasion—perhaps the best opportunity yet afforded—for all the issues in this controversy to be thoroughly examined. These hearings offer a challenge to all who participate, a challenge that can be successfully met only by a sincere determination on the part of every one to try to understand the other man's point of view and to examine the problems in the light of facts rather than through slogans or prejudices.

I would like at this time to call attention to an editorial which appeared in the *Post* this morning, which discusses this situation in the country, where people sometimes instead of discussing these problems intelligently and dealing with facts go outside the facts and attempt to charge that some of these progressive measures that are being advocated in the Senate are Communistic or Socialistic. I would recommend that everyone read that editorial in the *Post* this morning.

I am confident that—

SENATOR TAFT: I think it is very Socialistic, so I disagree entirely with the editorial. I think that you might have that to start with; if you are going to make a partisan statement, I am going to make one.

SENATOR MURRAY: I did not make a partisan statement.

SENATOR TAFT: But if you are going to give a rebuke to people who consider it Socialistic, I consider it Socialism. It is to my mind the most Socialistic measure that this Congress has ever had before it, seriously.

SENATOR MURRAY: I do not understand where you get the notion that I was giving any rebuke, I merely was calling—

SENATOR TAFT: You were commending the *Post* for rebuking those who called it Socialistic and a Socialistic measure.

SENATOR MURRAY: I was merely calling upon the people to consider these matters without going outside the facts and resorting to abuse like you sometimes do when we have measures like the Full Employment Bill on the floor. You charged that to have been taken out of the Constitution of the Soviet Republic.

SENATOR TAFT: It was, and Congress fortunately took out all of that part and passed a very good bill by means of the efforts of the minority of this committee, and not your efforts.

SENATOR MURRAY: I want to tell you that they passed a good bill because we stood by our guns and you voted for it too and then afterward tried to charge it with being a Communistic movement, which was absolutely false and you have not been given any great credit in the country for your actions in that matter.

SENATOR TAFT: On the floor of the Senate we adopted every principal amendment that the minority of this committee tried to put in, which you refused to accept and which the Senate adopted. And after the Senate adopted all of our amendments I voted for the bill because it then was a sound bill.

SENATOR MURRAY: I want to say that nothing of the kind occurred. You changed the name of the bill from "Full Employment" to "Maximum Employment," and I cannot understand the difference in meaning from "Maximum Employment" to "Full Employment."

SENATOR TAFT: That is a minor feature.

SENATOR MURRAY. You were attempting to confuse the minds of the people on a bill that was very worthy and very valuable to this country.

SENATOR TAFT: We obtained everything that we wanted.

SENATOR MURRAY: I do not propose to let you bluff me on anything. Now, you think that you are going to get away with it, but you are not going to get away with it with me. You are not going to make a grand-stand play.

SENATOR TAFT: Not at all. You started it. I never would have said a single word about it.

SENATOR MURRAY: You had so much gall and so much nerve that you would not let me complete my statement. I would have been glad to give you an opportunity to express yourself as far as you wished, but you are very impolite, you are very sarcastic, and I do not think that you are making any success with it.

SENATOR TAFT: Mr. Chairman, I think that you are the one that is being impolite.

SENATOR MURRAY: I am the chairman of this committee, and I want you now to subside and let me go ahead with this hearing.

SENATOR TAFT: You are so polite, Mr. Chairman, that I accede to your ruling.

SENATOR MURRAY: I want you to shut down right now or I will call the officers here and have you removed from the room, if you are going to make a rough-house out of it.

SENATOR TAFT: Mr. Chairman, I want—

SENATOR MURRAY: You think that you are pretty smart, a good bluffer and a bulldozer, but you cannot get away with it.

SENATOR TAFT: I think if that is the spirit in which you are going to conduct these hearings—

SENATOR MURRAY: You are expressing the spirit.

SENATOR TAFT: You started it. You started your statement with an attack upon the opponents of the bill, and I have a perfect right to reply to it, and I have done so courteously.

SENATOR MURRAY: You have no right to interrupt me in my statement here. You have no right to interrupt me. You are very impertinent and very unfair, and I do not think that you are creating any good impression on the people here that are listening to these proceedings.

SENATOR TAFT: Well, Mr. Chairman, you showed your intention to conduct this solely as a propaganda machine. This hearing is just a propaganda machine, and that is all right with me. That is your right, you are the chairman of the Committee, and I am perfectly agreeable to it.

SENATOR MURRAY: That is one of the things that the editorial is reprimanding here this morning. Everything that has been attempted to be done for the welfare of the American people has men like you coming along charging it with being Communistic. Nothing, as this editorial says, has done so much to raise the Communists' prestige in this country as the habit fallen into by a few of attributing to the Communists everything that is progressive. Communists do not deserve such kudos; "progressivism" is thoroughly American and thoroughly a democratic characteristic. But you want to make out that every effort on the part of the people of this country to make some improvement is Communistic.

SENATOR TAFT: Mr. Chairman, I did not call it Communistic, I called it Socialistic.

SENATOR MURRAY: You charged the Full Employment Bill—

SENATOR TAFT: That it came right out of the Soviet constitution, that is all that I said. I read it on the floor.

SENATOR MURRAY: Which was absolutely false and you know it.

SENATOR TAFT: Not at all.

SENATOR MURRAY: And you are going to make a political play—

SENATOR TAFT: The words came right out of the Soviet constitution. However, that is a minor question.

SENATOR MURRAY: I just want to say that you are reflecting your general habit and conduct here this morning that you do every time a progressive measure is up for consideration in the United States Senate.

SENATOR TAFT: Mr. Chairman, your politeness is so great that I think that I should state that I intend to present to this committee a comprehensive plan for health and federal activity in the health field which I consider is not Socialistic.

SENATOR MURRAY: Wait until I get through with my statement, and then you can present anything that you please.

SENATOR TAFT: I did not want to interrupt you, but it seemed to be a conversation, so I will wait until you get through.

SENATOR MURRAY: I am confident that when these hearings are concluded there will be less conflict and more agreement on what the federal government should do, so that the full benefits of modern medicine can be brought within the reach of all of our people. Among the unsung heroes and heroines of World War II are the members of the medical profession. On the battle front are doctors, dentists, nurses, corpsmen who wrought miracles of medical care. On the home front, those who remained to serve the civilian population performed patiently and perseveringly under a work load of unprecedented proportions. Now that the war is over, another task of heroic proportions confronts the medical professions, to bring the full gamut of preventive, diagnostic and therapeutic health services within reach of the fifteen or more million men and women who served in the armed forces, the civilians who backed them up on the homefront, and the families of both. It is my hope that the work of this committee will result in a national health program that will open for the public a new chapter in man's age old quest for health and vigor and will give the professions and the hospitals a new and larger opportunity to serve the public in their beneficient work. We have here this morning with us two other authors of the bill, the chief author being Honorable Robert Wagner, United States Senator from New York, and I wish to call on Senator Wagner at this point.

Senator Taft: I would like to make a statement, and I have to leave for the mark-up on the Housing Program Bill.

Senator Murray: No, you will not make a statement now.

Senator Taft: I stand on my right to make a statement in this committee, and now either that or I will take the whole matter on the floor and describe the spirit in which you have conducted this hearing, in which you are proposing to conduct this hearing, and all I wish to make is this statement.

Senator Murray: You can have an opportunity to make your statement at the proper time. This meeting was scheduled and the next witness is Robert Wagner, and he will make his statement and Mr. Dingell of the House will make his statement, and then you can make your statement, and I am going to regulate this hearing in that form.

Senator Taft: I am a member of the committee, and I demand the right to make a statement. I have to attend the hearings on the mark-up on the Wyatt Housing Bill, which is being considered in the Banking and Currency Committee, and all I wish to say, and it is very simple, is that—

Senator Murray: This hearing will be going on for a month or six weeks, and you will have plenty of time to make your statement.

Senator Taft: You have used this as a method of propaganda, of your statement, and I propose to make a statement.

Senator Murray: That is a falsehood, that is slander, and that is in line with your general conduct. I resent it.

Senator Taft: You can resent it all you like, and I don't resent anything that you say.

Senator Murray: I resent your further interruptions, and I will not consent to them.

Senator Taft: Mr. Chairman, I propose—

Senator Murray: I will have to demand that you—

Senator Taft: I intend—

Senator Murray: I will have to demand that you subside. I am not going to permit you to run this committee.

Senator Taft: Mr. Chairman, I want—

Senator Murray: As long as I am chairman of this comminttee, you are not going to come in here and start this kind of thing.

Senator Taft (to the reporter): I hope that you get all of this, because I want to take it to the floor.

Senator Murray: You can take it anywhere you want.

Senator Taft: All I intend to do is to—

Senator Murray: You can take it to the National Republican Committee or any place you want to.

Senator Taft: I intend to present to this committee a bill providing—

Senator Murray: Now, you can make that statement at the proper time. You are not going to make that statement now.

Senator Taft: Mr. Chairman, I have a right to make a statement to this committee, and I have never heard of a chairman of a committee refusing to recognize a member when he asked to make a statement.

Senator Murray: You are hearing one now.

Senator Taft: I am hearing one now.

Senator Murray: Because you have been impertinent and insulting.

Senator Taft: I have neither been impertinent nor anything as compared to the chairman.

Senator Murray: You interrupted me in my statement without my consent, and you did not ask me the privilege, you just interrupted.

Senator Taft: Mr. Chairman, I now desire to state a very simple statement that I intend to offer to the Senate and to this committee, a comprehensive bill providing for federal aid—

Senator Murray: You will make that statement at some other time, but not at this time, and you are not going to get away with this bulldozing that you are attempting here, to come in and disrupt this meeting, and you are not going to get any credit for it either with the American people.

Senator Taft: For federal aid to states as to the operation by states of comprehensive—

Senator Murray: You are not going to come in here like this.

Senator Taft: Of comprehensive state medical aid—

Senator Murray: You are interrupting the chairman of this committee, and you can shut your mouth and get out of here if you do not like the way it is being conducted.

Senator Taft: To be conducted by the states—

Senator Murray: You are not going to get away with it, and I am not going to let you do it.

Senator Taft: I move that when you have recovered—

Senator Murray: You may stop taking this.

(Discussion off the record.)

Senator Murray: You have disrupted the committee meeting, and you have attempted to make something other than a dignified meeting by your conduct. You are so self opinionated, and you think that you are so important that you think that you can come into this meeting and disrupt it.

Senator Taft: Mr. Chairman, I have not the slightest attempt to disrupt anything. I asked to make a statement.

Senator Murray: You did not ask to make a statement.

Senator Taft: I just did.

Senator Murray: You just did. You asked to make a statement and then you made it anyway.

Senator Smith: I feel that the Senator should be allowed to make his statement. I think that that is only fair.

Senator Murray: I am not going to disrupt the procedure that I have adopted. There are two or three opening statements that are to go into this record.

Senator Smith: I think that he should make his statement.

Senator Murray: I told him several times that he would be given an opportunity to make a statement. If he wants to come in here and act like a Senator and a statesman, he will have an opportunity to make his statement at the proper time.

Senator Taft: That is exactly what I have done, and I make the request now to make the statement.

Senator Murray: I will make an answer to that. You will be given an opportunity at the proper time to make your statement.

Senator Taft: Mr. Chairman, I am not going to attend any more meetings of your committee. We are through, and I think that every one will know that the report of this committee under your chairmanship will be a partisan report which can command no support or no respect.

Senator Murray: That is like your general conduct and you could not contribute anything to it if you did remain.

(At this point Senator Taft left the room.)

Senator Murray: Senator Wagner will now make his statement.

Statement of the Honorable Robert F. Wagner, a United States Senator from the State of New York

Senator Wagner: Mr. Chairman and members of the committee, I am very glad to appear before the committee today in support of the National Health Bill which I have introduced with Senator Murray and Representative Dingell. The bill is designed to establish a national health program along the lines set forth by the President in his message on this subject.

. . . .

(Senator Wagner described the provisions of the bill.)

HEALTH INSURANCE IS NOT SOCIALIZED MEDICINE

Some organized medical groups have criticized a national health insurance program on the ground that it involves "regimentation of doctors and patients," "lowered standards," "political medicine" and "socialized medicine" and so on. There is absolutely no foundation to these charges. Health insurance is not socialized medicine; it is not state medicine. These terms have been used by opponents of the bill to confuse the issue, which you have so emphasized.

Health insurance is simply a method of assuring a person ready access to the medical care that he or she needs by eliminating the financial barrier between the patient and doctor or hospital. Under the bill patients are guaranteed free choice of doctors, doctors are guaranteed the right to accept or reject patients, and hospitals are guaranteed freedom to manage their affairs. Specific provision is included in the bill for hearings and appeals on any issues which may arise between doctors, hospitals and covered persons. Specific provision is made for the judicial review of any disputed issues arising under the plan. It is clear, therefore, that the bill does not involve regimentation of doctors, hospitals or patients. Neither do I believe that the doctors of this country will lower the standards of medical care simply because they are guaranteed payment for their services.

. . . .

(Senator Wagner described his part in the enactment of laws governing social conditions. He said the bill safeguarded freedom of choice.)

FINANCING HEALTH INSURANCE

There is already pending before the Congress legislation to finance the cost of health insurance. On May 24, 1945 I introduced with Senator Murray and Representative Dingell a comprehensive social security bill (S. 1050 and H. R. 3293) providing for social insurance contributions for all social insurance programs. This bill was drafted on the assumption that 3 per cent of payrolls (up to $3,600 per year) would be allocated for health insurance of which one half would be paid by employers and the other half by employees. In other words, 1.5 per cent of payrolls would be contributed by employers and 1.5 per cent by employees. The bill also provides that the additional cost above 3 per cent due to the gradual introduction of dental and home nursing services would be financed out of general revenues.

I have been asked many times why the premiums for health insurance were not included in the National Health bill, S. 1606, and I should like to clarify the situation for the record.

Under the Constitution, all revenue bills must originate in the House of Representatives. This means that the House must consider and pass revenue legislation before the Senate. In order that the health insurance legislation can be considered and passed by the Senate without waiting first for House action, it was necessary to consider the benefit and revenue provisions separately.

This separation of legislation between the revenue and benefit aspects is in keeping with previous practice. In both 1935 and 1937 legislation relating to railroad retirement was considered and enacted in this way. I was one of the authors of that bill too.

Another reason for separating the benefit and revenue provisions is that under present arrangements in Congress different committees are concerned with these two matters. In the Senate, for instance, the Committee on Education and Labor handles all health legislation such as the Hospital Survey and Construction Bill, and the Public Health Service Act. The many technical problems involved in revenue legislation are handled by the Senate Committee on Finance. Similarly, in the House of Representatives health matters are handled by the House Committee on Interstate and Foreign Commerce, but revenue matters are handled by the House Committee on Ways and Means. The financial details relating to the raising of the revenue for the plan raises many special problems which have a bearing on existing income taxes and payroll contributions and should be considered in relation to these laws.

In terms of priority it is essential that the benefits should be given consideration first. If the Congress thinks that health insurance benefits should be provided, then the method of financing can be worked out in terms of the scope and character of the medical care provided.

Statement of the Honorable John D. Dingell, a Representative in Congress from the State of Michigan

Mr. Dingell: I want to confine my remarks today to the health insurance provision—title II of the bill—pending before this committee because that is the part I presume you are going to hear most about during these hearings. That is the part against which the American Medical Association and its satellite organization the National Physicians Committee has been shooting its poison gas designed for the sole purpose of confusing and misleading the American people in order to preserve the monopoly which it exercises over the health of the American people.

They have been releasing their stream of propaganda against this measure right along and laying a deadly barrage for the purpose of creating fear and confusion among the people. The object is to perpetuate a system which is outmoded. The American Medical Association—

Senator Smith: I just want to register an objection to an attack on the opponents of the bill as being wrongly motivated at this point. I am not objecting to the bill at the moment, but I do not like to start off with damning your enemies. I want to hear a constructive presentation of what is here and not what others may think about it.

Mr. Dingell: May I be permitted to ask the question whether I, as a member of the House, must come here and have a Senator purge my statement? That is my opinion, whether I am right or wrong.

Senator Murray: The Senator has concluded his objection.

Senator Smith: I did not intend to hurt the witness's feelings.

Mr. Dingell: Mr. Chairman, I submit that my opinions as contained in my statement are not subject to censorship by Senator Smith, whether he agrees with my views or not. As a member of the House of Representatives, I will not be subjected to the purging of my expressions. The statement will appear in the committee hearings unexpurgated or not at all. I am not insistent that the Senator agree with me. These statements, however, are my views.

Am I privileged to go ahead and make my statement?

Senator Murray: You may proceed.

Mr. Dingell: The American Medical Association and the National Physicians Committee have attacked the health insurance provisions of the bill as "socialized medicine," "state medicine" and "political medicine." In my opinion those who peddle such nonsense are either wofully ignorant or inexcusably rigid in their stand-pat attitude. I say this because any one who studies the bill carefully, section by section, and line by line, will find that these charges are not true.

I want to warn members of the committee that the health insurance features of this bill have been the subject of more wilful misrepresentation and misinformation than any other piece of legislation I have ever seen presented in all my thirteen years in Congress.

The National Physicians Committee, formed specifically to preserve the A. M. A.'s tax-exempt status under the income tax laws, is spending hundreds of thousands of dollars to circulate false statements to try to defeat the health insurance provisions of the bill. It is collecting money under the false pretext that contributions to it "should be deductible" from income taxes by individuals who contribute. As a member of the House Ways and Means Committee responsible for drafting our tax laws, I believe that the National Physicians Committee's statement to this effect is deliberately misleading and any such deduction is a violation of existing law which should be investigated by the Treasury Department.

The A. M. A. and the National Physicians Committee have the right to oppose this bill or any bill, to make its views known, and to spend as much money as they want to try to defeat this bill. But it should be clear that the American Medical Association in the field of medical economics does not come into the court of public opinion with clean hands. The American Medical Association's attempt to kill voluntary health insurance plans was finally stopped by the U. S. Supreme Court only after the A. M. A. was convicted of engaging in illegal activities in restraint of trade under the Sherman Anti-Trust law.

The false information which the A. M. A. circulated against the British health insurance system has been repudiated by the secretary of the British Medical Association, who said that the A. M. A. pamphlet on "Health Insurance in England" "contains only a succession of distorted and confused facts and a partisan selection of opinions. . . . Almost every page of the pamphlet provides matter for criticism on the score of inaccuracy or unfair presentation."

I predict that members of this committee, like members in the House, will be bombarded with similar false propaganda against the bill. My experience is that I cannot keep abreast of the volume of propaganda against the bill.

PUBLIC OPINION POLLS

As to public opinion polls, numerous public polls taken during the past eight years have shown that the American people are in favor of health insurance. I would like to include in the record a summary of the most important polls taken on this subject.

Last year the American Medical Association had to come out flat-footed for voluntary insurance. It finally had to be for something constructive. One of the types of voluntary insurance it now endorses is the insurance sold by private companies. The administrative costs for this kind of insurance now average about 45 per cent of the premiums. I repeat, the administrative costs for this kind of insurance now average about 45 per cent of the premiums paid by the insured. Just think of it! Forty-five cents out ow every dollar of premiums collected never come back to the beneficiary or his family in health benefits. That is not the extreme example some individual companies have administrative costs of 60, 70 or 80 per cent of premiums collected This is the tribute which an employee must now pay if he wishes to enjoy the doubtful privilege of voluntarily buying private health insurance

Irrespective of whether the individual purchases his protection from a private insurance company or through a plan controlled by a state or county medical society, he rarely gets complete medical care. Existing contracts have all the usual ifs, ands and buts in them The contract tells you when, where and how you must get sick in order to be eligible for the contract benefit. If you get sick when you only need a doctor at home or at his office, such medical care isn't covered by the contract You have to be sick enough to go to the hospital There are innumerable exclusions, limitations, deductions, exemptions of the kind you find in the small print in many health insurance policies

Let me illustrate from the voluntary plan we have in my own State of Michigan

(Congressman Dingell presented his analysis of the Michigan plan)

MR. DINGELL. Is compulsory health insurance such a radical idea as the A. M. A. and the N. P C. say it is?

If these charges are true how is it that such eminent business men as Gerard Swope of General Electric Company, David Sarnoff of RCA, and a number of other businessmen, bankers, publishers and individual doctors and dentists have endorsed compulsory health insurance as "a thoroughly American Plan, consistent with our tradition of using government to aid the people in doing things for themselves"

The principle of compulsory health insurance is no longer a partisan issue President Truman has endorsed the idea clearly and unequivocally in his special message to the Congress on a national health program

. . . .

(Congressman Dingell quoted a statement by Governor Warren)

The man who said that was Governor Earl Warren of California—a Republican I congratulate Governor Warren on his outstanding political insight He knows that the American people want health insurance He knows that the bugaboo of compulsory health insurance burst in California and that it will not scare anybody; that voluntary insurance cannot solve the problem He knows that it is good sense to advocate compulsory health insurance.

One charge made by the American Medical Association against the bill is that the Advisory Council is merely "advisory" to the Surgeon General. In other words, the American Medical Association implies that if you put a majority of doctors in control of the Council and make the Council's actions binding on the Surgeon General—why, then they would be in favor of a national health insurance plan I want to be frank about this As one sponsor of this bill I would fight with all the energy in me to prevent passage of a health insurance bill that put control of the fund under the American Medical Association or any other private organization, however reputable it may be

The charge that the Advisory Council in the bill is just a puppet Council is ridiculous Let me show you

. .

(Congressman Dingell quoted from the bill)

These provisions assure that there will not be any dictatorship or regimentation under the bill as the National Physicians Committee falsely claims

SENATOR MURRAY Thank you, Mr. Dingell

SENATOR WAGNER May I congratulate Congressman Dingell on his very persuasive statement I wish the people would read it. They would be persuaded

Statement of the Honorable Claude Pepper, a United States Senator from the State of Florida

SENATOR PEPPER Mr. Chairman, I deeply appreciate your invitation to present to the full Committee on Education and Labor the findings of the Health Subcommittee, of which I have the honor to be chairman These hearings will, I am sure, be a high point along the road to better health for all, along which the American people have been struggling for many years They are a tribute to your firm leadership, which has been discouraged by neither opposition nor delay Year after year you have joined forces with that great veteran fighter Senator Robert Wagner on his first National Health Bill Year after year you have carried to the people your message of better health for all, and you have received sustenance from them Year after year you have given unsparingly of your time to present to the people the message that better health could be achieved through a national health program This work has made it possible for us to meet here today to begin hearings on one of the most important measures before the Congress, S 1606, the Wagner-Murray-Dingell National Health Bill

. . . .

(Senator Pepper told of the work of his subcommittee and presented statistics on the need for an expanded health program)

SENATOR PEPPER The subcommittee's third interim report issued in January 1945, presented a series of facts showing the gravity of the nation's health problem Over 40 per cent of the nation's selectees were found unfit for military duty, and at least a sixth of these had defects which were remediable; many more had preventable defects

In fact, more than 23,000 000 people in the country have some chronic disease or physical impairment On any one day, at least 7,000,000 people in the United States are incapacitated by sickness or other disability, half of them for six months or more Illness and accidents cause the average industrial worker to lose about twelve days from production a year, a loss of about 600,000,000 man days annually

Let me interpolate here, I wish public opinion could become as excited about the 600,000,000 man days lost through ill health as they do about the relatively small number of man days each year lost by strikes

Sickness and accidents cost the nation at least $8 000 000 000 a year—half of this amount in wage loss and half in medical costs

Preventive services are inadequate—40 per cent of our counties do not have even a full time local public health officer Sanitation needs are great—846,000 rural homes do not have so much as even an outdoor privy Hospitals are needed—40 per cent of our counties, with an aggregate population of 15 000,000, do not have a single recognized general hospital Doctor shortages are severe—in 1944, 553 counties had less than one active physician per 3,000 population, the "danger line" and 81 had no active doctor at all Even in 1940 before many doctors were drawn off to war 309 counties had less than one active physician for every 3 000 people and 37 had no active doctor at all Maternal and child health services are inadequate—it is estimated that half the maternal and a third of the infant deaths could be prevented if known measures were fully applied Seventy-five per cent of our rural counties have no prenatal or well baby clinics at all under the supervision of state health departments State agencies had 15 000 children on their lists awaiting crippled children's care in early 1944 They do not even pretend to care for the half million children with rheumatic fever (the most killing of all diseases for children between ages 5 and 15), or for the tens of thousands of cerebral palsy ("spastic paralysis") victims

To meet such problems, the subcommittee recommended federal action with regard to certain features of a national health program, including federal grants for hospital and health center construction, sanitation, public health, medical research, education and medical care for the needy

The report also expressed dissatisfaction with the prevailing "pay as you go" or fee-for-service method of payment for medical services but withheld judgment with regard to the claims that voluntary health insurance plans offer a satisfactory solution to the problem This report *summarizes* the results of our further study of this subject and sets forth the conclusion we have reached

ECONOMIC BURDEN OF ILLNESS

Our latest report then goes on to state that the burden of sickness and medical care falls heavily and unevenly on people The burden is distributed unevenly, hitting some families so hard they are driven to financial ruin and the haunting misery which accompanies the vicious circle of poverty and ill health

Sickness is the greatest single cause of families going into debt Both national and state-wide surveys conducted by small loan companies themselves show this clearly Indeed, the results of their various studies are remarkably consistent Thus, according to the American Association of Small Loan Companies, medical dental and hospital bills are the greatest single cause of people borrowing from small loan companies This conclusion is based on the record of over 300 small loan companies Studies in Illinois and California show exactly the same pattern Further, the greatest single cause of bond redemptions, according to studies of both farm and non farm people is also sickness and medical costs

Senator Pepper: Sickness and medical costs are also the greatest single cause of people having to seek charity. Studies of public assistance rolls show this to be true, and we have conducted an interesting analysis of this point which confirms these larger surveys. Each year, as many of you know, the New York *Times* conducts a great humanitarian campaign for the "Hundred Neediest Cases" in New York City. Case histories of these needy people are published, summarizing the major facts about their cases. We found, from the brief summaries alone, that 85 per cent of the families were obviously indigent either as a result of sickness or of medical costs, or a combination of the two!

Do such barriers exist, Mr. Chairman? They most certainly do. In my part of the country this fact is so much in the experience of most families that it hardly needs proof. As I have said once before, most people in Florida no more expect hospital care during a serious illness than they do a trip to Europe in the summertime. Government studies have shown that less than 7 per cent of even the lowest income group among rural people (those making under $500 a year per family) receive any free medical care in the course of a year. Yet can it be said that farmers with mouths to feed, clothes to buy and insurance to pay can afford the $100 a year or so it costs on the average to purchase even minimum adequate medical care under our present system? They cannot and they do not. They and their wives and children go without instead.

What is the way out? The way out is prepayment, budgeting, the time tested, tried and true American way—insurance. Only through such a mechanism can these burdens be spaced out in time and over a large enough number of people to lighten them properly.

For over a hundred years the American people have been trying to insure themselves against the burden of medical costs, but they have still not reached their goal.

The voluntary payment plans have made progress since the first one began about a hundred years ago, but they still cover a comparatively small per cent of the population and take care of only a small percentage of medical services. It is also becoming clear from experience that reduced costs result from wider coverage, as in any insurance system.

At present, less than 4 per cent of the population receive complete prepaid care under voluntary health insurance plans. Seventy-five per cent of the population receive no prepaid care at all, even the most meager and partial. By "complete medical care" I mean, of course, only relatively comprehensive hospital services, and doctor's service in hospital, home and office. I do not even include dental care, home nursing and drugs. Most of the 25 per cent with some prepaid medical care are insured only against hospital bills, surgeon's bills or wage loss during sickness.

Now, as to the Blue Cross. Most of the people covered belong to either Blue Cross or commercial insurance plans. The Blue Cross plans have grown very fast in the last ten years. The latest figures show their membership to be around 20 million people. Whether they will continue to grow rapidly in the next few years or not, I am not prepared to say. Some feel that the wartime period gave the Blue Cross abnormally favorable opportunities for growth. I have been a proponent of hospitalization insurance for a long time, so I am glad that they have grown. Moreover, we should not think that they provide for more than they do. They cover only the hospital bill during ordinary illness, usually for twenty-one to thirty days, with partial payment for an additional sixty days, at a cost of about $24 per family a year. Since in any year one out of ten persons is hospitalized for the kind of illness they cover, this is important. But such hospital bills take only 13 cents (about a seventh) of the average medical dollar. The plans do not cover doctor's bills, which take about 40 cents of the average medical dollar (or three times as much), nor do they cover dental care, preventive medicine, nursing, or drugs.

Early, high quality doctor care, regular check-ups, and the like, are perhaps the most vital links in the whole medical care chain. Cancer, tuberculosis, nephritis, hernia, syphilis, arthritis, mental disease and others of our major killing or disabling diseases can be controlled only by early general practitioner or specialist care. Any prepayment scheme that does not assure their receipt has serious failings.

The commercial plans are of two major types—group and individual. Both pay specified amounts of cash toward medical expenses or wage loss; they do not actually provide medical service. The group plans represent about half the total in terms of premiums paid. Most of them do not cover the employee's family. They pay toward hospitalization for about 8 million people at present. Six of the 8 million are also eligible to receive payments toward surgeons' fees and toward loss of wages (in disabling illness lasting longer than one to two weeks). But no day-to-day doctor care is reimbursable under any but a very few of these plans, and even these are very incomplete.

The individual type of commercial policy varies tremendously, but the bulk of it consists of cash payments to the insured in the event of accident. Ninety per cent of the individual type policy premiums are for accident policies. The other 10 per cent are for sickness policies, which usually begin payment only after two weeks of sickness. They do not cover ordinary doctor or dentist care, their major aim being to replace wage loss during prolonged disability. Overhead and administrative costs are high in these plans. Only about 40 per cent of all receipts from policyholders is paid back to them as benefits. The rest goes for company expenses and profits.

Obviously, it is always the fine print in these policies that knocks the ordinary person, who thinks himself covered, out of the expected coverage.

MEDICAL SOCIETY PLANS

The medical society plans are also limited in coverage and scope. They usually cover only surgical care and obstetric service after a nine to ten month waiting period. They do not cover routine diagnosis, periodic check-ups or home and office visits. (The only major exceptions to these statements are the plans in the states of Washington and Oregon.) They cost about $24 a year per family and included about 2.2 million people in 1945, or less than 2 per cent of the population.

Senator Morse: May I interrupt at that point? I am glad that the Senator from Florida has mentioned the plan in the States of Washington and Oregon.

I am going to ask the chairman and the committee that is selecting witnesses to appear before this committee at a later date to make certain that we have some representatives from the states of Washington and Oregon as witnesses to testify in regard to Washington and Oregon plans.

I think that there is a great deal of merit in those plans, and I feel that this committee should thoroughly analyze them before it takes a position on any piece of legislation.

Senator Murray: We will be very glad to have those witnesses.

GROUP PRACTICE PLANS

Senator Pepper: Finally, there are about 3 million people who are members of prepaid medical care organizations sponsored by industry, consumers, private groups of physicians or government. These plans tend to offer the most complete care, especially the group practice plans, such as the Ross-Loos, Kaiser, Stanacola, Endicott-Johnson, Group Health and Farmer's Union in Elk City, Okla., groups. Sad to say, this is also the type of prepayment plan which was fought the hardest by organized medicine all during the thirties. This opposition is not entirely past history, despite the Supreme Court decision in the District of Columbia Group Health Association case. Complaints of discrimination against group practice prepayment plans have continued all during the war.

Now, the shortcomings of private or voluntary medical insurance:

We have therefore concluded that voluntary, or private health insurance has serious shortcomings, some of them inherent in the method itself. A few are as follows:

1. Millions of people are not eligible for any plan.
2. The plans usually meet only a small part of the health needs.
3. Many people cannot afford to join.
4. Others feel they do not need medical insurance; or they drop out after a year or so because they "didn't use the plan last year, and don't think it worth while to stay in." High turnover of membership is a constant problem and raises the cost.
5. People who are sick, or expect to get sick, tend to join the plans most. Accordingly, voluntary plans either have a tendency toward "adverse selection of risk" or they adopt such rigid eligibility requirements that they exclude the very people who need care most.
6. There is much overlapping and duplication, as well as geographical and social gap leaving.
7. There is a tendency to high promotional and administrative costs.
8. The plans are not well suited to the needs of our increasingly migrant population.

9. With very few exceptions, they have not provided consumer representation on their policy making boards.

Next, Mr. Chairman, the tax assisted voluntary plans.

These defects in private insurance became apparent quite early in our study, and we began to believe that subsidies from tax refunds might overcome them and obviate the necessity of a completely tax based program. We were fortunate in discovering that experiments along these lines were already in progress, under the postwar program of the Department of Agriculture. Accordingly, we studied this experience very carefully. We have recently issued a monograph embodying the major lessons of these plans. I have already drawn this monograph to the attention of the committee members, and it is available to the interested public.

What we found was that tax assisted voluntary plans do not offer the basis of a national pattern. They remained subject to what are apparently the inherent defects of voluntary health insurance, although subsidy had obviated certain other defects.

Each plan took the form of a voluntary health association open to all farmers in the country. They offered relatively complete doctor, dentist and hospital care to the whole family, within the limits of availability and quality prevailing in these counties. The total cost of the services was $45 a year, but government subsidy succeeded in reducing the actual charge to the family to $20, with a minimum payment of $13. Yet, despite these low charges and every evidence of good will toward the experiments by the people, only 40 to 50 per cent of those eligible to join actually did so. Turnover was considerable.

Let me say our committee spent a lot of time and a great deal of effort in trying to determine whether it was possible to provide adequately for the health needs of the people of this nation by any kind of voluntary plan.

We honestly endeavored to canvass every suggestion and every experiment that was in progress in the whole country. We considered all kinds of compromises and all sorts of meetings of the minds of the various diverse groups in an effort to find some voluntary system that would give the needed help and hospital care to the people of the country, and it was our conclusion that none of these plans will afford coverage to the nation as a whole. You can cover a certain number, of course, but you can cover a certain number by voluntary insurance or commercial insurance, but if you are going to cover the whole nation, we have concluded that a national health program, based on compulsory insurance, is the only way by which it may be achieved.

There is much experience both domestic and foreign on which to base such a program. A few years ago we would have demanded information in detail on how such systems operate in other countries. Now our temper seems to be different. The tides of nationalism have swept so high it almost discredits a speaker to state what foreign experiences and opinions are. I wish only to observe the following: During my recent trip to Europe I talked with many people in many countries about their health organization. In practically all cases I found them planning to increase the percentage of the population covered and the scope of the medical benefits offered under their health insurance plans. The more democratic the country, the further advanced were the plans, for example, England and Czechoslovakia. In no case was there any desire to give up health insurance and return to the fee-for-service system.

Actually we do not have to go abroad for experience in this subject; for a certain section of the population it has been the "American way" for a long time. Ever since 1798 our merchant seamen have received their medical care through services supported by social insurance and tax funds in a program administered by the U. S. Public Health Service. It first began through the payroll deduction plan which, as late as 1874, was called by the Public Health Service's Surgeon General "a peculiarly American institution." I think there would be a tremendous storm of protest if the Congress attempted to take this program away from the seamen.

While this is a specialized experience, and of course does not represent the same pattern as one for the whole nation, it is rewarding for us to learn from this experience that the health insurance idea was not planted in our heads by Bismarck or any one else, but dates in our government from almost the beginning of the Republic.

Would the public support the view that neither voluntary plans nor tax assisted plans can do the job, and that a national plan, based on the social security and tax mechanisms can do it? How do the people feel about these matters? We are their elected representatives, and we need to know. Our mail is one way of finding out.

I, for one, have been impressed with the thoughtful, original note struck in the letters to me which favor this bill. I have likewise been struck by the fact that the great majority of letters opposed to it are from medical society representatives or doctors. I have no doubt that the opponents are quite sincere, but it is difficult not to stress that many of them simply parrot unsubstantiated slogans issued by a propaganda organization, financed to a great extent by certain "patent medicine" manufacturers, namely the National Physicians' Committee. This committee is a successor to the so-called "Physicians' Committee for Free Enterprise"; in turn a subsidiary of the Committee to Uphold Constitutional Government. You will undoubtedly have an opportunity to hear statements of the sort this committee issues during the course of these hearings. You can judge their merit.

Another way of learning what the people think is through the public opinion polls.

. . . .

(Senator Pepper quoted interpretation of various polls)

To summarize this part of my testimony, I would like to quote from the conclusion of the subcommittee's health insurance report:

"To cover every one, the adverse as well as the good risks, the young and the old, the sick and the well, the rural and the city dwellers, the low and the high income groups, the poor and the rich areas, all this takes a mechanism as representative and all inclusive as the federal government. Some people will not protect themselves voluntarily even if they are able to do so; others will be able to afford to do so only under a national plan. A national solution by spreading the risk among the whole population, and by equalizing costs between income groups and areas, will enable all the people to protect themselves at a cost they can afford to pay.

"The voluntary plans have served and are serving a valuable purpose, even though they do not provide any final answer to the problem of prepaid medical care for all the people. They have developed useful data on the prepayment of medical costs and have educated large sections of the public on the value of medical care insurance. Furthermore, they have trained sizable numbers of medical and administrative personnel in the technics of prepaid medical care. There is no reason why such plans should not continue to perform useful functions within the framework of a national health insurance system.

"It is our considered opinion, reached after months of careful study, that the only way complete care can be brought to all is through a national health program, built around a system of prepaid medical care. It must be financed by required contributions to the social security fund and by payments from general tax revenues. Such a program will satisfy all the requirements set forth above and will make possible the achievement in the foreseeable future of our goal of high quality health care for all."

SENATOR SMITH: Will the Senator yield for one little statement?

SENATOR PEPPER: Yes.

SENATOR SMITH: I appreciate the care in making this report, but I must object to it appearing as the considered opinion of the committee, because, so far as I know, I have never been asked to attend any meeting or to discuss these measures with the subcommittee. I might be prepared to go along with them, but I have never been asked my opinion on them; therefore I would like in the record that is to appear that until now I have never been considered or asked to consider these issues presented by the able Senator from Florida.

I want to compliment him on the very extensive surveys made. I think the findings of fact have been most important, but I question that we should show that the committee has arrived at conclusions until we have got together and had a meeting and decided to agree on the report.

SENATOR PEPPER: The able Senator from New Jersey is quite correct in calling attention to the fact that there has not been a formal approval of this report by the committee in its publication by the committee. It has been prepared by the staff with the collaboration of members of the committee. It has now for some weeks been in all of the hands of the members of the committee, and the majority of the members have communicated to the chairman their approval of this report. It was that that led me to leave the inference that it had committee approval, but the Senator is quite correct in saying that, in its final form, it has not formally been adopted as the formal report of the committee.

SENATOR SMITH: He has done a spendid job here, but I think it should appear, without my taking issue, there are very controversial questions, not as to what we want to accomplish, but there are issues as to the way that should be accomplished.

SENATOR PEPPER: That is correct.

SENATOR SMITH: I think it is fair and proper that I should be recorded as yet not convinced of the wisdom of the solutions asked for here and simply have that appear in the record. I am open to conviction, and in these hearings I hope to come to a conclusion with the committee. I hope it can develop a fine, sound, overall national health bill.

SENATOR MURRAY: It is proper that your position should be made clear in the record.

SENATOR PEPPER: I am glad you made that clear.

"The cost will not be greater than that of our present inefficient and wasteful fee-for-service system. According to leading experts, the charge to the average family under a national health insurance program will actually be less than it pays now, partly because the employer and the government will both contribute to the fund. It is noteworthy that the labor organizations, all of whose members are wage earners, are among the stanchest supporters of national health insurance.

"Health insurance is often erroneously called 'socialized medicine' or 'state medicine.' As President Truman pointed out in his health message, such a system is one in which the doctors are employed by the government. We do not advocate this. National health insurance, which we do advocate, is simply a logical extension of private group health insurance plans to cover all the people. It is a joint national endeavor. It will guarantee free choice of doctor or group of doctors and free choice of hospital by the patient, and free choice of patient by the doctor. Indeed, free choice will be extended, because current financial barriers to the actual exercise of free choice will be broken down.

"Some aspects of a national health insurance program are, of course, experimental. No legislative framework or administrative plan can be perfect at first. Shortcomings will undoubtedly be uncovered, but they will be overcome as we learn from experience. None of these shortcomings, however, will be anywhere near as costly as the toll of lives and health now being exacted by our failure to have a national health program providing good medical care for all. The need for it is urgent.

"The concern of the federal government in this matter is clear. If only the national defense were involved, this would be reason enough for the adoption of a national health program. The costly lessons of the selective service rejections and of the armed forces medical discharges have made this apparent.

"Today America faces the challenge of world leadership. To a very large extent we bear the principal responsibility for the kind of world we are to live in. America can continue neither prosperous nor secure unless her people are healthy and full of strength. We owe it therefore to the nation and to every man, woman, and child in it to open to every citizen the door to the marvels of modern medical care. Only thus can we make our full contribution to a free and happy world, unhindered by the heavy drag of sickness and ill health."

MATERNAL AND CHILD CARE

Now, although compulsory national health insurance is the rock bottom minimum requirement for an effective national health program, there are certain other aspects of health which such insurance cannot cover. Most important of these additional aspects, in my opinion, is the problem of adequate maternal and child care, particularly for the families who are not covered by the provisions of S. 1605, but to a lesser extent for those who are, but will not be able to obtain adequate services for such care under existing circumstances.

I have long had a particular interest in the health and welfare of mothers and children. Last year, I introduced (for myself and Mr. Walsh, Mr. Thomas of Utah, Mr. Hill, Mr. Chavez, Mr. Tunnell, Mr. Guffey, Mr. LaFollette, Mr. Aiken and Mr. Morse) Senate Bill 1318, whose purpose is to provide for adequate maternal and child health and crippled children's services and child welfare services in all the states.

Although all of the provisions set forth in S. 1318 are not specified in this bill to which we are not addressing ourselves, some will be included through amendments which are being proposed. S. 1318 would provide a unified program of health services and medical care of high quality for all mothers during maternity and for all children, administered by the Children's Bureau through grants to state health agencies. It is, in my opinion, imperative that these services be assured to mothers and children under a comprehensive plan. Under the amendments proposed, it will be possible, though not mandatory, for the federal agencies and the states to place responsibility for all such services in the same state health agency. I earnestly hope that if this legislation is enacted policies of administration will be adopted to assure the attainment of these objectives and the continuing leadership of the Children's Bureau, to which the nation which loves its children is so much indebted.

The section of S. 1318 which covers child welfare services is not being considered in the national health program. This is a loss that must be made up promptly in some way. Child welfare services must also be carried forward as part of the total service to the nation's children in these postwar years. It is folly to make provision for children when they are physically or mentally sick and not make comparable provision for them when they are in need of social services. I am sure the committee will welcome further suggestions from witnesses who are particularly concerned with the health and welfare of children.

I am pleased that public responsibility for the health of mothers and children is now being discussed as part of S. 1606. For instance, the provisions which control sanitation and other environmental conditions in the interest of the health of all people in the community are particularly important for children. The communicable disease control clauses are equally important, for such diseases are no respecters of age or person—children and adults catch things from each other. The saving of parents' lives through the insurance medical care plan in this bill means that fewer homes will be broken up and more children given a normal life.

The purpose of our deliberations is to formulate sound public policy with respect to the many problems involved in a program of health and medical care. There must be funds to pay for the medical care which is given to individuals. Doctors, dentists and nurses, as well as hospitals and health centers, must be within reach of every individual, regardless of his race, color or creed. All persons in the population must be covered in one way or another. The long established policy of the expenditure of public funds by public agencies responsive to the will of the people must be continued.

Let me reemphasize that we have a special stake in our children as the future of our nation. If the time of their childhood runs out before something is done for them, we cannot retrieve what has been lost. There must be no distinction between the medical care provided for children of insured and noninsured individuals.

Under this proposal for a national health program, the President has placed major responsibility for the financing of personal health service benefits on the insurance fund, with coverage based on employment. The President, however, has set before us a complete objective in terms of children—"that no American child shall come to adult life with diseases and defects which can be prevented or corrected at an early age," and that the "health of American children, like their education, should be recognized as a definite public responsibility."

I am calling your attention, therefore, to the limitations on benefits and coverage within the insurance system which will affect children. Premature infants, for example, may need hospital care beyond sixty days, and therefore beyond what can be paid for under the prepaid personal health service benefits of this act. Some children will be ineligible for benefits, because neither of their parents has meet the conditions of employment prescribed for coverage. In order that all children may receive full health and medical care, certain amendments are being proposed to title I, part B, which will assure care for those excluded from title II, and provide the additional care needed by all beyond the limitations imposed in the insurance section.

The benefits which an individual receives under the insurance provisions will necessarily depend on the medical facilities in the place where he lives. We know that the kind and quality of medical care which can be obtained by mothers and children at this time varies greatly from state to state, and between city and farm. We also know that, on the whole, health and medical care is less plentiful and of an inferior quality for the minority groups and for migrant families. The purpose of including a maternal and child health plan as part of the national health program is to assure that health and medical care of good quality will be made available to mothers and children—whoever they are, wherever they live, whatever their income.

Under title I, part B, the state health agency will keep informed about qualified doctors, dentists, nurses, and other professional people to whom parents can take their children. If there are places in the state where good medical and hospital care is not available for mothers and children, the state health agency will arrange for it. Sometimes this will mean taking steps to encourage doctors and dentists who have skill in providing care for mothers and children to locate in certain areas. Sometimes it will mean setting up community clinics, to be financed from maternal and child health service funds. It may mean working out a school health program in a local community, covering all children through high school. Such a program will include correction of defects found at the medical examinations. The ingenuity of the state health agency will be directed to the task of making it possible for mothers and children to have access to the services of specialists and to modern methods of care as they need them.

All this will be worked out within the maternal and child health program as a service in the community. There will be planning by the state health agency with the schools and other community agencies, and with the government agencies paying for personal health services for insured mothers and children. The work will be coordinated with the hospital and health center construction program to be sure that the special needs of mothers and children are met. Opportunities will be created for doctors, dentists, nurses and others who are serving mothers and children to become more skilled in the handling of their special problems through postgraduate education. A good program can go forward only as fast as trained personnel becomes available.

Unless there is a centralized responsibility for overall planning, the objective of complete care for every child—preventive, diagnostic and curative services linked together—will almost certainly fail. I want this kind of care for mothers and children to become a reality. I am sure there are many millions of parents in this country who agree with me in this. It is our goal to accomplish this in the next ten years.

I want to give you briefly just one example of what will be done under the maternal and child health program. Figures show that about 5 per cent of the total number of babies born in any one year are born prematurely. Approximately 30 per cent of the infant deaths in the first year are attributed to premature birth. There are many practical steps which are necessary if we are to save the greatest possible number of these babies' lives. There must be special nursery units equipped with incubators and special heating arrangements in all hospitals taking maternity cases. There must be incubators available in the health centers for use in the baby's home when he is not born in a hospital. Special ambulance service is necessary to take a premature baby to the hospital. Nurses and doctors must be given special training in the care of premature infants to provide the services needed. Specialists who can give consultant service must be within reach. It will be a responsibility of the state health agency, in accordance with its approved state plan under title I, part B, to see that each and every one of these steps is taken.

Under a national health program of which insurance is the cornerstone, it is of the utmost importance that there be a sustained effort on the part of public agencies to make sure that medical care of good quality is available for use. I am glad that the sponsors of this bill have included title I, part B, which provides grants to states for maternal and child health services under the direction of the Children's Bureau, which has been responsible for the setting of standards for maternity care and for the health and medical care of children under the Social Security Act.

I have been intimately acquainted over a period of years with the work of the Children's Bureau in the health and welfare fields, and know that its primary concern is the public interest. It has striven consistently for health and medical care of good quality for all mothers and all children and youth. The Children's Bureau is now responsible for the administration of the Emergency Maternity and Infant Care Program under which well over one million wives and babies of service men have been given care during the war. The Children's Bureau will bring to an extended maternal and child health program the wisdom of its past experience.

. . . .

(Senator Pepper read proposed amendments in behalf of maternal and child welfare)

SENATOR PEPPER: Let me add only that those amendments are proposed after long consultation and most sympathetic cooperation among the sponsors of the two bills. I happen to be one of the sponsors of the Maternal and Child Welfare bill and am in favor of its passage, but I am equally strong in my support of the pending measure, the Wagner-Murray-Dingell bill, and we have worked together, the Children's Bureau and others who are sponsors of the Maternal and Child Welfare bill, so that these amendments might be fitted into 1605, and if 1606 should be adopted, then it would cover, essentially, what appears in the Maternal and Child Welfare bill also.

If the unfortunate event should occur that 1606 should not be adopted, when then, of course, 1348, the Maternal and Child Welfare bill can be considered as a separate matter.

The Honorable JAMES E. MURRAY (Chairman), Presiding.

Present: Senators Murray, Ellender, Aiken, Morse and Stanfill.

Statement of Watson B. Miller, Federal Security Administrator

MR. MILLER: Individually and as spokesman for the Federal Security Agency, I stand squarely behind this program. It is necessary. It is practicable. It is long overdue.

(After repeating some of the general points made in Senator Pepper's statement, Mr. Miller said that he wished to endorse not only the extension of general and specific public health services it envisages but also its provisions with respect to grants-in-aid.)

. . . .

It is to the interest of the entire country to remove, as the bill proposes, the present statutory limitations on the appropriations that Congress may authorize for public health grants to the states. It is equally to the interest of all to employ a formula permitting variation in federal grants for this purpose within the range of 50 to 75 per cent, according to the fiscal capacities of the several states.

. . . .

If specific legislative provision is to be made for maternal and child health care and for services to crippled children, these measures for dealing with this need through grants-in-aid on a variable formula seem appropriate. We have, as you know, accepted the amendments to this portion of the bill proposed by Senator Pepper. The proposal to make federal financial aid available to the states to help them provide medical care for needy persons is generally sound and desirable. The provision that state and local agencies may arrange to have this care furnished to the needy through the health insurance system which the bill would establish seems to me particularly important. It would have the advantage both of encouraging better care for the needy and of promoting more effective coordination among the several parts of the national health program.

But the main provision for individual medical care contained in the bill—and indeed the backbone of any national health program worthy of the name—is a system of prepaid personal health service benefits to cover the majority of the country's workers and their families. The provisions for this purpose in title II are in accord with the President's recommendations and are, on the whole, workable. This applies to methods of administration as well as to the system of benefits itself. Appropriate safeguards, for example, would assure, as the President has rightly insisted, that people remain free to choose their own physicians and hospitals, that doctors remain free to accept or reject patients and to participate in the system full time, part time, or not at all. Speaking for myself, and with deep personal conviction, I would not be a party to any plan which intruded between the physician and the patient or failed to preserve and guarantee the professional independence of medical practice.

Since ready access to medical care for people in all parts of the country is the prime purpose of such a system, another point on which there is general agreement is that administration should be decentralized as far as practicable and that the state and local governments should assume their full share of administrative responsibility. State and local participation in administration would follow the pattern already well established by our existing public health services. If this pattern were to be continued with respect to the system of prepaid personal medical care, it would have the great advantage of building on a very solid base of experience and of promoting the effective coordination which is essential as between community preventive services and individual care.

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As the bill is at present drafted, three large occupational groups would not be automatically eligible for these benefits—railroad workers, federal employees and state and local employees—though for some of these groups special arrangements for participation might be made by their employers. I should like to see at least federal workers and railroad workers brought within the automatic coverage of the system. In the case of state and local employees, action of state legislatures might be necessary.

SENATOR MURRAY: Mr. Watson, it is charged by some that this insurance program proposed in this legislation is socialistic. Have you anything to say about that?

MR. MILLER: I wish that I understood more about what the term means. I realize that the words "socialized medicine" have been used so much and sometimes carelessly, I think, that it has almost become a dictionary term. I think that we are a social nation, and as far as this proposal being a socialistic one, it cannot be more than democracy in its greatest aspects because this program cannot be inaugurated, and if it was inaugurated it could not flourish without the consent and support of the American people. If democracy means socialism, I accept the soft impeachment.

Senator Murray: Do you think that it is a proper function of the government to undertake a program which will be of such benefit to a large section of the country that at present is unable to secure the medical care and attention necessary for the preservation of its health?

Mr. Miller: Lincoln had a lot of quaint methods of expressing truisms. Once he said that his conception of government was to do for the people only the things that they were unable to do for themselves. I have great pride in the advance of American medicine, and I think perhaps you and the other Senators here present, some of you at any rate, will know that for perhaps two decades before coming to the government I at least stood on the threshhold of medicine, although I had brains enough not to try to invade it or try to practice it or prescribe for people. However, I learned something, as much as a layman should be trusted about medicine, and I have great pride in American medicine and American medical people and the advances in research and in the understanding of ideologic factors and diagnostic procedure, and of course the very marvelous and brilliant advance of therapeutic measures. Nobody is more zealous than I am for the high ethics of American medical practice. I would not be a party to attempting to force down the throats of American medicine anything that was not right and anything that would not be right; but I believe, with all of the advances which have been made and with a fairly certain knowledge of the successes and failures of the voluntary systems, that now is the time for the central government to spearhead this effort. I think that we can no longer wait.

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Senator Murray: Would the establishment of such a system as here proposed be of benefit also to business and industrial interests of the country?

Mr. Miller: Without doubt. I think that the figures of absenteeism were rather completely exposed to the committee by one of the Senators, perhaps Senator Pepper, but I have pulled together a few figures here. In the critical year of 1942, our first full year of war, illness in one way or another cost American industry 4,000,000,000 work days, the equivalent of a full year's working time for 13,000,000 people, or more than the total strength of our armed forces.

Senator Aikin: You say that 4,000,000,000 work days were lost in the full year in the war from illness?

Mr. Miller: Yes.

Senator Aikin: Do you happen to know how many days were lost by strikes in the same period?

Mr. Miller: I have read the figures but actually I do not have them off hand. This figure breaks down into 500,000,000 lost work days of absenteeism caused by illness and accident, the equivalent of 1,000,000,000 lost days due to permanent disability, and a billion and a half due to premature death, and still another billion attributed to the reduced efficiency of those who stuck on the job when they were really too sick to work. Somewhere around 7,000,000 men and women in this country are too sick to work on the average every working day in the year. The price we paid for sickness and disability in 1943, the wages lost by workers and the costs to business added up to not less than $15,000,000,000.

Senator Murray: Thank you, Doctor, for your statement here this morning. I am sure that it will be of benefit to the committee.

Mr. Miller: I regard these hearings as the most momentous that I have been privileged to attend in two decades or more.

Senator Aiken: I was interested in Dr. Watson's observations on socialistic ideas. Am I right in the understanding that when a so-called socialistic idea is approved by the majority of the people, through their duly elected representatives, that in your opinion it becomes part of our democratic processes no matter what it was called before?

Dr. Miller: I do not think that it can fail to do it, the electorate having the right to reverse themselves.

Senator Aiken: So long as it expresses the desires of the majority of the people, you would call it a democratic process?

Dr. Miller: Using the term in its best sense, although I am a member of the party that spells it with a capital letter.

Senator Aiken: The first socialism that I heard of was when I was just old enough to remember it, when it was first proposed to have the R. F. D. routes established, to have the mail delivered to the country people the same is it was to city people, and the charge of "socialism" was made against the R. F. D. at that time. And then the parcel post was a socialist idea, and then the postal savings bank: that was definitely socialism. But according to you, when it was accepted and voted for by the majority of the people, I understand that you would take it out of the realm of socialistic ideas, out of that category?

Dr. Miller: Still admitting that I do not understand the word "socialism," that it may be rather a complex mosaic, I am not sure that I would recognize a communist and I hear that name a good deal, if I saw one behind the gooseberry bush in the garden. I think that this would be democracy in action. It is pretty difficult for people to realize that, when Selective Service came along, that really was not a drafting, using the term in its most objectionable sense, but a spectacle of the entire nation volunteering, and that is what it came out to be.

Senator Aiken: That was established 150 years ago, I would say.

Senator Murray: The free public school system was very bitterly opposed in this country when it was first proposed; is that right?

Dr. Miller: Yes. There is so much evidence and I do not want to detain the committee too long. Medical students who have gained their medicine through tax-supported institutions have never objected to that as far as I know, and that could well be termed "socialized medicine" or "socialized medical instruction." We have a social country here.

Statement of Dr. J. W. Mountin, Medical Director, U. S. Public Health Service

Dr. Mountin: Dr. Parran is now in Europe, serving on a committee to form an international health organization under the U. N. O. He has delegated me to appear in his stead and to express to you the point of view of the Public Health Service.

. . . .

Yesterday the authors of the bill gave us their interpretation of the bill. They told us also that other measures to complement or to complete the President's program were contained in bills before the Congress.

. . . .

I should mention some other legislation which is not directly related to personal health services or medical care in the restricted sense of the word. I refer particularly to sanitation legislation, particularly those bills that are designed to remedy the rather disgraceful pollution which goes on now of our streams and coastal waters.

Senator Aiken: Is there any program being worked out to eliminate stream pollution? Is your agency working with other government agencies on any program to eliminate stream pollution through the country? I agree with you that it is disgraceful, and it is also unprofitable to let it continue.

Dr. Mountin: A specific program of remedial measures, no, but studies are now going on and surveys; but what is needed is legislation which will take us beyond the study and the survey stage into actual aid on the construction of needed facilities.

Senator Aiken: I have not heard this matter mentioned by any witness up to now, and I am particularly interested in it because I think it is one of the most important undertakings that the country can embark upon. When we see our little streams polluted as they are, carrying disease and spoiling the fishing, it strikes me that it would be one of the most profitable undertakings that we could engage on, not only from the health standpoint, but from the recreational standpoint, the industrial standpoint and from every other standpoint. It could be worked in in some cases with flood control. It is so very important that it is a mystery to me why we have not been doing something about it before now and why we delay any longer in undertaking it.

Dr. Mountin: In addition to the points that you have raised, Senator, one is still more serious, and that is on account of the pollution now going on. Many of the streams that otherwise would be suited for sources of water supply are just rendered not available for that purpose. It is a serious economic situation, and I am perhaps dragging this in.

Senator Aiken: It is tied in with the entire subject of rural sanitation as well as urban sanitation.

Dr. Mountin: That is right. At the outset, I should like to record that the Public Health Service is heartily in sympathy with the type of program that is envisaged by this bill, S. 1606.

(Dr. Mountin submitted a prepared statement for the record. He then discussed the public health aspects of the bill.)

Dr. Mountin: The other point that I would make at this time is in the nature of an amendment. The act as it is now written limits public health services to the ordinary preventive work of health departments, health education and what we commonly speak of as communitywide services. We would recommend that that definition be expanded so as to include the support of hospitals for communicable diseases; that is already included, but beyond that chronic diseases and especially tuberculosis and mental disorders. These conditions are excluded, virtually so, from the title II of the bill, and I would say appropriately so. It leaves them without any federal participation.

Senator Aiken: They are not covered under other legislation?

Dr. Mountin: No, sir, except in a general way. There is in the Tuberculosis Control Act a provision where tuberculosis could be supported. The sums, however, are only sufficient to carry on a case finding and general preventive work. There, perhaps, is authority for that.

Senator Aiken: If it appeared that this bill would not be enacted into law, would you favor existing legislation to cover the situations which you have just presented to us?

Dr. Mountin: Tuberculosis could be covered under existing law, but I would question whether we could take in the mental hospitals. We had a mental bill before the Senate, but that features research and community clinics in the interest of mental hygiene in that order.

Senator Aiken: You mean the bill that we have already had hearings on before this committee?

Dr. Mountin: That perhaps could be handled by some clarification of the language. There is definite need for bringing the federal government into that picture. Now, the states are required to support these institutions themselves, there is wide variation among the states, and the extent to which they have developed these institutions, and that variation is determined directly by their economic resources. That is true of many tuberculosis hospitals as it is of other aspects of medical care.

The second part of that title, that is, part *b*, provides grants to states for the support of maternal and child health services. It is my understanding that the Children's Bureau will give testimony later on this phase of public health work, and I shall not go into it in any detail.

Yesterday, you will recall, Senator Pepper introduced certain amendments which would more closely integrate this feature of the bill with the other parts of it and incorporated some of the features of the bill which he had introduced for the child health services.

The point I wish to make and to stress is the essential unity of public health services, which should be maintained at federal, state and local levels, and that essential unity includes financial support, administration and the actual delivery of services.

At the present time we have rather the anomaly of two of our important health agencies set up in different departments of the government, the Children's Bureau in the Department of Labor and the Public Health Service in the Federal Security Agency. Perhaps that separation has not been so important in the past because the sums of money at our disposal in each agency were not large, and in any event they were brought together at the state and local levels, the funds. But now we are going into much larger sums, we are expanding the scope of the service and the need which had not existed previously for closer integration will be increased many times. So it is my understanding that the governmental reorganization is now being considered by the President, and perhaps this is not the occasion on which to discuss the details of that reorganization, because it is not part of this legislation. However, I hope that I am not out of order in saying that we hope that this committee will consider that and hope that a good bit of this reorganization would be accomplished soon, and, if not, perhaps certain features of this administration would have to be reoriented in the light of the prevailing structure.

There is no question about the need for additional maternal and child health services. It will also be true, I think, in respect to other phases of public health, that while they need to operate within the general framework, or the same general framework of organization, they will be part of the program at different stages of its evolution which will need to be sharpened up and more closely focused on problems which may be more emergent at the moment. In the past, maternal and child health services certainly needed it and still do. The other parts of the bill focus on venereal diseases and mental hygiene and there is now a broad field coming in which is geriatrics.

Senator Aiken: This may not be the time and the place, as you said, Doctor, but do you think that health, security and education are closely related so that they could well be administered under the same head, or maybe you still think that this is not the time and place to answer that?

Dr. Mountin: Of course, there are phases of education which have little or no relation to health, and for the most part they do not. There are phases of education, however, that are closely identified.

Senator Aiken: You have got medical inspection in the school, and dental correction, which you can hardly separate from education.

Dr. Mountin: I would hope, when this bill is enacted, that that phase which you would hardly call education but a service to a particular age group, and commonly administered by a school health department, would be brought into this general scheme of organization. I might say too, Senator, that the need for developing it in the educational framework has largely risen out of its neglect in the health framework. The health people had no provision for doing much about these defects of childhood, little was done on location of them, but following through to the correction, it had not been done. And educational departments, quite appropriately, stepped into the breach and have endeavored to make up for the deficiencies in the health organization. I think, as we develop and piece out those deficiencies, the need for education in the administrative picture will lessen.

Now, there is another phase, of course, of health in which we will need the educational framework very much, and that is what we call health education. A large part of that very definitely should be carried out through the framework of administration for education. That is such things as supplementary feeding through school lunches and that sort of thing. Obviously, that is more closely identified with the educational function.

Senator Aiken: We know, that, when a child has good health and good eyesight, the work of the truant officer is cut down, and the work of the sheriff is probably cut down in later years.

Dr. Mountin: That is right.

Senator Aiken: I was a school director for fifteen years in my town, so I know that when children are healthy they study better and they learn more, and I have felt for a long time that we should have a new department of the government covering it. I wanted to find out how far you thought we should go and how much you should include under such a new department if it should be established, as I hope it will be.

Dr. Mountin: I am not at all sure that I could speak with any degree of competence from the federal level, but I was speaking of the integration of services at the operating level.

Senator Aiken: I do not see how you can separate child health from education.

Mr. Watson Miller: Could I interject there that the President is making some studies of reorganization, there is an agreement between the Secretary of Labor and myself, that functionalizing should be brought together. As to the exact complexion of such pulling together, we have nothing to offer at the moment because the matter is now being considered downtown for later presentation to the Congress.

Dr. Mountin: I started to mention another phase of specialization in public health, just by way of interest. That is that there is a broad field of what they speak of now as geriatrics, in which many medical men are specializing and which I anticipate will grow in importance. So to speak, it complements pediatrics. Pediatrics deals or has to do with the conditioning or the growing organism for the environment in which he lives, the developing organism. Geriatrics will condition the declining organism to the environment in which he has to live. We have altogether too many people now dying at 45 largely because they have not learned how to live with their infirmities and how to adjust to declining physical resources.

There is another title, and another part in title I, on grants made to states for medical care for the needy. Mr. Altmeyer will give testimony on that tomorrow, and there is just one passing comment that I would like to make, and that is I will hope too that the provisions of the act that are now just merely mentioned express a *preference for integrating this* with the general medical care program. I am hoping that that will be carried out because it would be a mistake, *eventually*, as this thing gets going to set them *apart*, the *needy apart* from the general population. It would be unwise socially and administratively too, I think.

Suppose that I just change the *order* here *a* bit *and say* a word about grants for education and research. First, let me mention research, that any medical care program and any *human enterprise, and this is* especially true of medical care, is bound to become sterile and routinized and spiritless unless there is infused into it a well thought out and aggressive and a *substantial* plan of research. And this bill very wisely sets or *makes* provision for that, a specific amount for the first two years, and then thereafter a percentage of the personal health service fund.

There *are innumerable subjects that* need to be explored. There is, for example, the cold, the most common of human ailments, and we are utterly helpless in doing anything about it that is really effective. There is another malady that is universal. I refer to the very common *condition of dental* decay.

Senator Aiken: What diseases are on the increase?

Dr. Mountin: Those of later life. They are cancer, diabetes, heart diseases; those are three striking examples.

Senator Aiken: Are they *increasing in actual numbers or* percentages?

Dr. Mountin: They are increasing in actual numbers and in percentages too, but let me explain: The population is aging. There are more people over 65 than before, and more over 45 than before, and we are reaching what we speak of as the cancer age. They are reaching the age when they die or when *the heart starts to give out or when the arteries become brittle.* Because of that alone we would naturally expect more people to be dying of those conditions and to be afflicted with them.

Senator Aiken: What is the status of arthritis? Is that increasing? The reason I ask that is, a *good many servicemen* call on us in getting asistance in regard to a larger disability allowance or help in some way because they are suffering from arthritis.

Dr. Mountin: *Arthritis is a group of diseases: almost any*thing that happens to a *fellow's* muscular and skeletal *system* that causes pain on movement, and we present that through *the broad term of "arthritis."*

Senator Aiken: Is *it on* the increase?

Dr. Mountin: Perhaps not except in respect to the age factor. The joints become less mobile, the muscles less pliable, as we get older, and because of the increasing age of *the population they are at a corresponding increase* in arthritis. Arthritis, I should say, while it is not a prominent cause of death, shows up in the causes of death. *It is one of the most disabling of* conditions. It *looms* up very large in the total illness burden and in the total disability burden too.

Senator Aiken: Would it *naturally* increase as the result of the war?

Dr. Mountin: It might. *Exposure of* those under combat *conditions might* have caused some increase. I wouldn't know. *I want to say this about research*: Research needs to be carried *on on many* fronts. There is fundamental knowledge that needs *to be developed*. There are fundamental facts that need to be disclosed dealing with the broad questions of physiology. Then there are new remedies that we *need*. *Many of* our remedies are very unsatisfactory. There are preventive measures that we know nothing about.

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Now, on education too I am hoping that the committee will see fit to include and retain that. I am speaking *now* more particularly of medical *education*, because I have some familiarity with that over and above the other professional groups that are involved. Medical education is a very expensive *process*. *It costs the school* alone some *$1,200 or* $1,500 a year to train a medical *student*. Tuition returns to the school some $400 or *thereabouts*; roughly one third. Now, the remaining $800 has got to be secured from some place. *Up to now* we have been able to draw very largely on endowments, but as a *resource endowments* are not as generous or as *satisfactory* as they should be. I am not including in *that $1,200, please* understand, Mr. Chairman, any of *the personal* cost of the student, bed and board *and clothing* and so on. I am only talking about direct educational cost.

Medical education, *many think*, is really facing a crisis because of the cost, unless something like this can be done, and *because of the long* process of education, the high tuition and *personal expenditures* of the individual. Many of the boys of limited circumstances, I am afraid, *just will not* be able to *go to school* unless these costs can be reduced, and perhaps *something can be set up in the* way of fellowships. Now, I might add to that, *it so happens, I think, that there* are some twelve or *thirteen state schools*. The remaining schools are supported by endowments *and* tuition. So you can see the rather critical *stage—which we are not in now*, exactly—the rather critical circumstances which we are *likely to face in* regard to medical education.

There is another phase of education which is perhaps the most neglected of all, and that is picking up the doctor after he has graduated from school, is out in practice, and providing for his continuing education. Many of the *things* he learned in school he will *forget if he does not have the opportunity* to put them into practice continuously. New remedies are coming in; new diagnostic procedures, new *instruments*; *and he needs to have the opportunity to refresh himself on* that work. Otherwise, deterioration will just go on, and very fine doctors, as they now are when they come out of our medical *schools*, *will be not so good rather shortly unless there* is some scheme provided which will afford opportunity for conregard to medical education.

The full significance *of this bill, I* do not believe, is quite realized. We do a lot of *talking* and *arguing* as to whether or not it is going to improve the quality of *medical care or* whether it is going to deteriorate or whether the doctors are *going to be satisfied and a lot of other points like that; and* the true import, I think, is somewhat overlooked. There is a definite philosophy in this bill, and it is this: heretofore the *individual* has had to *finance his own cost of illness himself* out of pocket. Now, this *is an attempt to change that process* or change that arrangement, and, so to speak, lift the cost of illness off the backs *of the sick people and to place it on the* broad shoulders of society, so to speak. It is somewhat analogous to the change that was made in the support of education upward of a century ago. Now, I think that is, we all should realize and appreciate, a fundamental change in our philosophy; and I say that not to cause you to shudder at all but to appreciate our *developing thought, our social* consciousness and the wider uses of government framework to carry out the will of the people and to provide essential services which now they can only provide for themselves *through their own* resources.

Dr. Mountin argued in behalf of government assuming costs of illness and distribution of medical facilities.)

Senator Ellender: Doctor, do you *think* that the passage of this *bill would* stimulate the building of more hospitals by private concerns or do you think it will be necessary for the Congress to provide funds to expand these facilities?

Dr. Mountin: There are two elements necessary to correct *the condition.*

Senator Ellender: I understand that. You have gone through that.

Dr. Mountin: One is in this bill and another *in another* bill.

Senator Ellender: We passed the Hill-Burton bill some *time ago.* Do you think the funds provided in that bill would be sufficient to meet the amount necessary to take care of this should this bill go through?

Dr. Mountin: *The ceiling price on that appropriation* somewhat limits its usefulness, in the sense that I have some doubt as to whether it will cover the whole need, but it will go a long way.

Senator Ellender: *The point* that I want to make is that if you provide our citizenry with the funds and the doctors and everything else you may be lacking in facilities to meet the emergency so that they can get *adequate hospitalization.*

Dr. Mountin: *The two need to go on* together.

Senator Ellender: Together; yes.

Dr. Mountin: We have a fund to *aid in* construction. We have a fund to help pay medical cost. The construction fund, however, was designed to meet only one expense, and that is the *construction* expense.

Senator Ellender: I understand.

Dr. Mountin: But the operation of a hospital *annually* is something in the neighborhood of a quarter to *a fifth of its original construction* cost, so you have an annual expenditure which needs to be met; and that would be accomplished by this prepaid medical service fund that title II seeks to establish.

Senator Ellender: Well, you do not think that fund would be sufficiently large, do you, so as also to take care of the facilities? The scheme worked out in this bill.

Dr. Mountin: Not unless is was incorporated. And then, furthermore, I think that the initial capital outlay is an appropriate item for direct appropriation. I would think that that would be better than having some one assume the risk of building a hospital and trying to liquidate his obligation by an excess charge on the service rendered there.

Senator Ellender: Would you venture an opinion as to the amount of public money that would be necessary in order to provide sufficient facilities to make this bill workable, as you have just said it ought to work?

Dr. Mountin: I do not have the figures in my mind. I think those were given to the committee at the time of the hearings on the Hospital Construction Act.

Senator Ellender: I thought maybe you had them.

Dr. Mountin: No, I do not have them at the moment. I am sure they have been given; or, if not, we will see that they are. I mentioned that many of the preventable diseases that loomed up large as causes of death at the turn of the century have now pretty well been conquered. We are now confronted more and more with the diseases of older life that require a high degree of medical skill, high development of physical facilities and a staff organization for diagnosis and treatment. And, therefore, we need to improve health further.

It has been alleged that doctors will be surrendering whatever freedoms they have, they will be subjected to an overall government authority, that hospitals cannot operate or might not be able to operate as they think appropriate; in other words, that it is a thoroughly regimented system that is proposed here. I fail to see that in the bill. It is true that it does provide for a federal fund. The details of finance are not spelled out in the bill, but, as I would infer, it contemplates payroll deductions, a direct tax on income of self-employed people; and contributions to the fund from other groups that might seek to utilize this mechanism for the performance of their medical care. Now, that part of it is centralized. I see no way of decentralizing it except by considering an entirely different bill: a series of state plans or some aid of one sort or another to voluntary organizations or something entirely different from what we have before us. Without something like that before us, I am unable to discuss it.

Senator Ellender: Have you given thought to another plan to make it more or less on a voluntary basis instead of an obligatory deduction of 3 to 4 per cent, as I understand this bill provides?

Dr. Mountin: Up to 3 per cent, but that is incorporated in other legislation. What is it? 1050?

Senator Murray: Another bill. It was originally in this bill and it was separated.

Dr. Mountin: Another bill. Well, the use of voluntary agencies brings up another question, and that is, if the federal government makes this deduction and collects these taxes and a fund is established, then it would seem to me that the federal government has a responsibility for seeing that the benefits enumerated in the act are actually delivered. I am afraid that if they are not delivered the average citizen would not care to take as an excuse "Well, we expected somebody else to do that," the states or the locality and, if they failed to do it, to present their claim to them. I am quite sure that they would come to the federal government, which had collected the money and maintained the fund. Can voluntary effort take care of it entirely by itself; is that the point you wish to make?

Senator Ellender: Yes. Of course, I have not made a very close study of the bill. I read it casually, and that is one of the features of the bill I am opposed to; I will be frank in saying that. I was in hopes that we could work out some voluntary method of doing it. And I am wondering the extent to which you and others have studied these voluntary methods.

Dr. Mountin: We have studied them rather extensively and intimately. Voluntary effort is going on now, of course.

Senator Ellender: Could we employ that in some way? Have you given it thought?

Dr. Mountin: It could be employed, certainly; but the question is, Is that the best way of going at it? Should we prop up voluntary effort or face the whole job and use the framework of government for accomplishing it?

Senator Ellender: Personally, I would much prefer our devoting some time to trying to find a voluntary method rather than to have the government have its hands in it. I would want us to be removed from it, if we could.

Dr. Mountin: I understand your point of view, Senator.

Senator Ellender: That is why I was so insistent on the Congress providing sufficient money to build a system or a chain of hospitals throughout the country and let that be the extent of our obligation, and through the voluntary system make it so that these obligations are taken care of, let the hospitals be utilized for the purpose which you say is necessary for good health. Now, what plans on a voluntary system, if any, have you worked out that you think will be workable and that will improve the present voluntary system?

Dr. Mountin: There is no clearcut plan that we have to present to you at the moment. We have thought of that possibility. You have not one voluntary organization but literally hundreds of thousands of them.

Senator Ellender: Yes.

Dr. Mountin: You would have to deal with that number or by some process of elimination get down to a smaller number or, perhaps, give an exclusive franchise, using that term, to some one. That process would be a rather painful one, and I am not sure it could be accomplished. I think they would all seek federal funds. In fact, that has been the experience in foreign countries. You do not set up one; you set up literally hundreds of them. How to discipline and how to get a national program through thousands of agencies organized under a variety of offices with no direct responsibility, as most of them now are, to any elected official; it would be truly a herculean task. They could be propped up here and there, perhaps.

Senator Murray: Doctor, if the voluntary system would have to be financed by the federal government, then it would not be a voluntary system.

Dr. Mountin: Then it would not be a voluntary system.

Senator Ellender: What I have in mind is that, if we provide the money for the facilities, it strikes me that the communities ought to be willing to make use of those facilities by interesting themselves in this voluntary plan of insurance, as is now in effect in many communities. In other words, the thing that bothers me about this is that it will eventually lead into the government's taking charge of it. And in the long run, when this bill gets well in effect, it might be so broadened as to have some bureaucrat up here from Washington, maybe of a different type from my good friend Miller here, to take charge, and it may be a little hard on the medical profession. This is just a start, you know.

Dr. Mountin: Well, this goes quite a ways, too.

Senator Ellender: It goes almost the full way from the beginning.

Dr. Mountin: Yes.

Senator Ellender: And that is the part I do not like.

Dr. Mountin: It is quite comprehensive.

Senator Ellender: Oh, yes.

Dr. Mountin: And, in fact, if we have any criticism, I should have voiced that criticism earlier in my testimony; that it does not go the whole way. It takes in 80 to 85 per cent of the population now, either directly or indirectly.

Senator Ellender: What is left out? What does the 15 per cent represent?

Dr. Mountin: There are some enumerated here: government employees, railroad groups, state employees, and religious bodies and a few others, making up about 15 per cent.

Senator Ellender: Yes.

Dr. Mountin: Although some of them could be brought in by compact.

Senator Ellender: Why were they left out?

Dr. Mountin: I know of no reason, from the standpoint of the delivery of medical service. As a matter of fact, I should like to see them brought in. I believe there are other reasons, tied in with the basic Social Security Act. Is that correct?

Senator Murray: The theory would be that they would be permitted to come in.

Dr. Mountin: That is right.

Senator Murray: As you say, by compact

Dr. Mountin: That is right.

Senator Murray: That was the hope and the expectation.

Senator Ellender: Is that through the Railroad Act, Senator Murray?

Senator Murray: That was because they already had a system; and the desire was to avoid forcing this on them unless they voluntarily come in and announce it under an agreement.

Senator Ellender: Does the same thing prevail as to federal employees and state employees?

Senator Murray: No. They would, of course, be entitled to come in under the act as it is unless they had some system similar to the railroad system: If they had, then they too would come in under a compact.

Senator Ellender: The only reason why those were left out, then, as I understand it, is that they already have some system of their own?

Dr. Mountin: That is not true of government employees. It is tied in with the basic Social Security Act. It is covered in the Social Security Act, as I understand it, the other benefits of the Social Security Act.

Senator Murray: The studies that have been made of voluntary systems have come to the conclusion that it would be impossible to have a voluntary system that would cover the country adequately to give the American people the service that they should have in modern care.

Senator Ellender: As I was just informed by Mr. Miller, one of the reasons why state officials were not put in was because of inability of taxing them from a constitutional standpoint.

Dr. Mountin: I think that was one of the reasons.

Senator Ellender: But the bill has covered as many as it is possible to cover under the law; is that it?

Dr. Mountin: I believe the railroad people could be brought in, and government employees, by Act of Congress. Is that correct, Mr. Chairman?

Senator Murray: Surely.

Senator Ellender: Let us put it this way, then: As to all those that have a system of their own, and as to the others left out, the reasons you do not have them in are because of legal reasons?

Dr. Mountin: I do not think that is quite correct. I think the government people do not have a system of their own.

Senator Ellender: I said as to those that have systems of their own.

Dr. Mountin: With respect to voluntary agencies, the voluntary insurance schemes of themselves under the present scheme of arrangement and the present scheme of financial support, I think we can say categorically that there is no hope of their setting up, carrying on a comprehensive, exclusive type of medical care program. The only way that they might do it would be an extensive scheme of public support. It is conceivable that that might be accomplished. Then there is a big question of public policy, as to whether the government wishes to assume its own risk, as it does in other enterprises, or whether it would attempt to discharge an obligation through an organization that it has to support; and, taking it from experience abroad, eventually support it for the most part too.

Senator Murray: The voluntary systems that have been set up all vary in amounts?

Dr. Mountin: Oh, yes.

Senator Murray: That would then be a very difficult situation for the government to undertake to finance them or aid them.

Dr. Mountin: I would assume we would have to be required to have a uniform type of benefits, and that would change the existing situation very much.

Senator Murray: And the study seems to indicate, then, that one single system administered by the government would be the most effective system.

Dr. Mountin: That is right.

Senator Ellender: Well, there is no doubt about it, to cover all. If you could get it and impose it on them and force them to it you would accomplish your end. The point I am making is, I do not like to go that far. It strikes me that, as to those unable to get medical care and attention, something should be directed for them. That is, we should go as far as the traffic will bear so as to see to it that those unable to pay get the proper medical attention. But in your effort to do that you cover everybody in the country, and those left out are those you really cannot reach, as I understand the bill.

Dr. Mountin: I think there are a few points here that are a little bit misunderstood. That is, first of all, the question of imposing this on anybody. I would assume, in our democratic process, that the people will express their will at these hearings, and that when Congress votes on it it will be a reflection of the will of the majority of the people.

Senator Ellender: What I mean by imposing is, if I am an employee, I want to do it my way, and the government will just take from me 3 or 4 per cent, whether I want it to or not.

Dr. Mountin: If it would be the will of the majority I would presume we might regard it as an imposition.

Senator Ellender: You mean enacted through Congress?

Dr. Mountin: This could not be enacted except through Congress, and it obviously would be the will of the people. The next point I think I should make clear is that it is not proposed here that the government set up a whole arrangement of facilities throughout the land, hospitals and health centers, which it would directly operate, and that physicians would be placed on the public payroll and certified as to specialty and all the rest of it, that that would be carried out by government decree. This only has to do with the financing, and it seems to me that the bill is now sufficiently safeguarded. Or, if the committee or Congress so sees fit to throw in additional safeguards with regard to making it clear that it is the facilities that now exist or that might be brought into being because of the better scheme of finance utilized in carrying out the provision of the act, we can do so. Now, I would say that it is true that in the act certain authorities are set up. The Surgeon General happens to be mentioned here, the position, as the principal figure in the administration.

Senator Murray: Some have suggested that the bill setting up the Surgeon General and providing for the administration of this act would create a dictator under the Surgeon General. Have you studied that?

Dr. Mountin: I hope that we humble servants in government have not risen to that position. We have always regarded ourselves as the humble servants of the people and responsive to the will of Congress. I hope that that is our record.

Senator Murray: Is there anything in the bill that would permit him to become a dictator?

Dr. Mountin: He is appointed by the President; he has to be confirmed by the Senate; he is under the control of the administrator, who sits in the government and in the President's cabinet; he has to make a report to Congress annually; he has to come before it for his appropriations; and I am sure that if anything went wrong and a substantial body of citizens or even a few individual citizens had complaints, I am sure Congress would very quickly transmit those to us, as it does on occasion, and ask us to come before it and give an account of our story.

Senator Ellender: Doctor, I have been in the Senate ten years, and I can give you a little inkling of the "cloakroom gossip" to the effect that many of these laws are discussed for certain purposes and administered in such a manner that some of the authorities in Washington—some of them call them "bureaucrats"; I guess that is a good name for them—do many things that Congress never dreamed of. And this bill as expressly drafted; you may say all you want is that the purpose is "this, that, and the other," but you will find in its administration that a lot of fellows who have charge of it usually go beyond the pale of what Congress had in sight. I have had a few instances myself, in recent months, with my good friend Mr. Miller. I will not go into that. It has been worked out to some extent but not to what I think it ought to be. Anyway, I do not believe all of us are satisfied with some of the action taken by OPA from all you hear in the paper and over the radio.

Let me ask you this question: you say that the beneficiaries of this plan would have the opportunity of selecting a doctor of their choosing?

Dr. Mountin: Certainly.

Senator Ellender: And it would be paid out of that fund?

Dr. Mountin: Certainly.

Senator Ellender: Suppose it was necessary for me to be operated on, and I selected a doctor whose charges were about four times what you say it should be, what then? Would I be permitted to select that doctor who would charge four times as much as the fee you might fix or agree to?

Dr. Mountin: The arrangement, as I interpret it, would be that the authority here, who we will say is the Surgeon General.

Senator Ellender: Yes.

Dr. Mountin: Of course, he would not look into every case.

Senator Ellender: Yes.

Dr. Mountin: That agreements would be entered into with doctors in states and localities with respect to methods of payment and to a range of fees that would take into account not alone the kinds of service that the patient required but the degree of competence and skill that are necessary in the performance; and within those restrictions what you would get out of the fund should pay your bill.

Senator Ellender: Well, of course, as you know, we have a lot of doctors here in Washington. In fact, I know we have in my own state. They will perform, say, a removal of tonsils, where the rate might be $50, but in order to get that skill you speak of I would not want to trust this $50 doctor; I would want one who would charge $150, because of that skill he has. Because you want to do it cheaper than that, he would either have to pay the difference or else he would have to agree to pay whatever fees the administrator recommended. Am I right?

Dr. Mountin: If in your particular case you had a very unusual case of bad tonsils, and that it required a very unusual degree of skill, I would expect that that would be provided for.

Senator Ellender: Doctor, the point I want to make is this: you know yourself that you have in all communities famous surgeons, famous lawyers, who work, who might do the same work for a citizen, but charge considerably different from what that citizen could obtain from other sources. Is that not true?

Dr. Mountin: It is true, and I might even say unfortunately true.

Senator Ellender: I see. In other words, what would happen, as I see it, is this: You would fix a system of fees that could be charged by the doctor who is in business for a year the same as one who has been in business twenty-five years and has acquired that skill.

Dr. Mountin: No, that is not so. I think in my earlier statements I provided for the kinds of contingencies or situations you have been describing.

Senator Ellender: Does the law provide for that?

Dr. Mountin: Yes; it says that the Surgeon General shall arrange with physicians and groups of physicians as to rates of pay, methods of pay.

Senator Ellender: Are the amounts fixed?

Dr. Mountin: The group of physicians are certified as to the competence of their members, and then adjustment of these rates of pay is made as to the competence of the individual.

Senator Murray: Doctor, you have not referred to the National Medical Advisory Policy Council, which has been set up here, and the work that the Advisory Council has done in establishing professional standards.

Dr. Mountin: That is what I had in mind in making those remarks, but I want to say one more point, Senator, and that is that under the present scheme of remuneration physicians now give a lot of service for less than they really should get, because of the economic circumstances of the patient. That is a high proportion, 25 or 30 per cent, that many physicians give of their time to charity service.

Senator Ellender: That is free work.

Dr. Mountin: In order to compensate for that work that they give free, or for less than what it is worth, they frankly have to overcharge those that are in better economic circumstances. I think that is unfortunate. I do not blame the physician. I just say he is the victim of a circumstance. I think with this arrangement that while some of these very high fees would be leveled down some it would not be uniform. That is ridiculous. That is not thought of in the bill at all. It would be most unjust, and it would be stultifying if it was incorporated in the act. But leveling out the fees at the bottom you will find that the total income of physicians should be increased under this scheme of support as is contemplated in title II of the act.

Senator Morse: Doctor, is it true that the Veterans Administration is at the present time trying to encourage the treatment of veterans by doctors in their local communities?

Dr. Mountin: I understand they are working out those contractural arrangements as may be feasible. I do not have the details. I understand somebody from the Veterans Bureau is coming later. Is that not right, Mr. Chairman?

Senator Murray: Yes.

Dr. Mountin: I do not have the details, but I know from reading that they are endeavoring to work out those contractural arrangements, utilizing local doctors, local hospitals, in the localities where the veterans live for certain types of conditions.

Senator Murray: You may proceed with your statement.

Dr. Mountin: I am about through. I wonder if I have overlooked any point.

Senator Murray: Would you explain that advisory council which is to be set up under the bill, and what its jurisdiction would be?

Dr. Mountin: Well, it provides that the Surgeon General shall set up at the federal level an advisory council. I do not have the exact wording, but in general the council shall be representative not alone of the professional bodies but of the institutions that are concerned with care, and with groups that are concerned with receipt of service; so we have both the point of view of the producer and the recipient of service. The act also requires that he shall consult with the council on matters of policy, and that he shall report to Congress on the use that he has made of these councils. It provides for regional councils that parallel the national one in many respects, so that you have that balancing of authority. It is not exactly authority, but that participation, I should say, of professional and consumer groups all the way down the line in the administration of the act.

Senator Ellender: Who selects this council? Does not the Surgeon General do that?

Dr. Mountin: Appointed by the administrator, I think.

Senator Ellender: The administrator. So that he could have people of his own choice?

Senator Murray: It is on page 41, section 204.

Dr. Mountin: Approved by the Federal Security Administrator.

Senator Murray: But they are selected from panels of names submitted by the professional and other agencies.

Dr. Mountin: That is right. "The sixteen appointed members shall be selected from panels of names submitted by the professional and other agencies and organizations concerned with medical, dental—" and so on. So the nominations, so to speak, sort of come up from the groups.

Senator Murray: With that kind of circumstance it would not be possible for the Surgeon General to set himself up as a dictator, as he is required to take advice from this Council on matters of policy and he has to make reports to it.

Dr. Mountin: I do not see how he can. As I said before, I have been in the government upward of thirty years, about twelve of that time here in Washington. And we feel that we are accountable to Congress, and I hope that our record with you is such that you can say that we have been responsive to your will. I can see no reason why, simply because we are dealing with somewhat larger sums of money than we have in the past, why our relationship with you should be changed in the least. You certainly have the authority to "bring us to book" any time you see fit. I know you do it; and we are glad you do.

Senator Ellender: You don't have as much power now under the Health Service as the administrator would have under this bill.

Dr. Mountin: Well, unless you put money and power in the same category, or say that money is power,—

Senator Ellender: You will not disagree with that, will you?

Dr. Mountin: As far as I was concerned, I think we have felt the same degree of responsiveness to Congress, and in fact I know they have looked more intimately into our affairs than when we were the small Marine Service. I am sure they will look still more intimately as we get into this type of service relationship with the general population.

. . . .

(Remaining questions related to Dr. Mountin's interpretation of the costs of service and fixing of fees, the Advisory Council, and so on.)

(To be continued)

National Health Program

PLATFORM ADOPTED BY THE AMERICAN MEDICAL ASSOCIATION

One of the ten points in this platform will be published each week.

1. The American Medical Association urges a minimum standard of nutrition, housing, clothing and recreation as fundamental to good health and as an objective to be achieved in any suitable health program. The responsibility for attainment of this standard should be placed as far as possible on the individual, but the application of community effort, compatible with the maintenance of free enterprise, should be encouraged with governmental aid where needed.

Official Notes

INCORPORATION OF ASSOCIATED MEDICAL CARE PLANS

The Secretary of State of Illinois on March 30 issued a certificate of incorporation under the General Not For Profit Corporation Act of Illinois to Associated Medical Care Plans. The new corporation is a national organization which will include all state and local medical care plans that comply with the minimum standards for medical care plans approved by the Council on Medical Service and Public Relations of the American Medical Association.

The objects of the new corporation as set out in the articles of incorporation are broad. They embrace a variety of activities, which can be expanded as future experience and developments may indicate. Specifically, the authority granted by the state of Illinois permits the new corporation "to promote the establishment and operation of such nonprofit, voluntary medical care plans throughout the United States and Canada as will adequately meet the health needs of the public and preserve and advance scientific medicine and the high quality of medical care rendered by the medical profession of the two countries." Significantly, the corporation recognizes that "state and local medical care plans should be autonomous in their operation so that the needs, facilities, resources and practices of their respective areas can be given due consideration, but that the health and welfare of the public is advanced by the coordination through the medium of this corporation of methods, coverages, operations and actuarial data."

The actual activities that are at present contemplated are indicated by the specific duties that the proposed by-laws impose on the commission of the corporation, which, in effect, is the corporation's board of directors. The commisson is directed to undertake and promote:

(*a*) Research and compilation of statistics with special studies of experience and collection and distribution of financial and service data.

(*b*) Consultation and information services based on contacts with existing and contemplated plans concerning administrative policies and procedures, and the distribution of significant literature and information.

(*c*) Public education by interpreting the national scope and significance of the medical care plan movement under medical society auspices with publicity methods suitable to the various groups in the public and yet consonant with proper professional practices.

(*d*) Coordination and reciprocity among plans with reference to transference of subscribers and benefits in the development of national enrolment among large enterprises and authoritative contacts with governmental or national agencies such as Farm Security, welfare and industrial groups.

The necessary details dealing with the manner in which these duties will be performed are matters that will evolve from future meetings of the commission and of members of the corporation. To expedite the initiation of corporate activities, a meeting of the commission has been called for April 26 and 27 in Chicago from which will emerge considered operational plans. These will be presented for approval to the first meeting of the members of the corporation, now tentatively to be held in San Francisco the two days immediately preceding the annual session of the American Medical Association in July.

Among the more pressing of the matters on the agenda of the commission for its April meeting is the acceptance of applications for membership and the appointment of an executive director to administer the day by day activities of the corporation. Plans, at least temporarily, call for the establishment of an office, with necessary administrative and clerical staff, in the headquarters building of the American Medical Association, thus facilitating coordination of the activities of the new corporation and of the Council on Medical Service and Public Relations of the American Medical Association.

The following men are serving as indicated on an interim basis until the membership can elect officers at the corporation's first annual meeting:

President—F. E. Feierabend (Surgical Care, Inc., of Kansas City).

Vice president—William M. Bowman (California Physicians' Service).

Treasurer—Norman M. Scott (Medical Service Plan of New Jersey).

Secretary—Jay C. Ketchum (Michigan Medical Service).

Commissioners—Willard C. Marshall (Oregon Physicians' Service), Edwin M. Kingery (Iowa Medical Service), Arthur J. Offerman (Nebraska Medical Service), L. Howard Schreiver (Ohio Medical Indemnity), Lester H. Perry (Medical Service Association of Pennsylvania), Herbert H. Bauckus (Council, Medical Society of State of New York), Raymond L. Zech (Council on Medical Service and Public Relations, American Medical Association), A. W. Adson (Council on Medical Service and Public Relations, American Medical Association), Edward J. McCormick (Council on Medical Service and Public Relations, American Medical Association).

Medical Legislation

MEDICAL BILLS IN CONGRESS

Department of Children's Welfare

Representative Luce, Connecticut, proposes by *H. R. 5260* to establish at the seat of the government an executive department to be known as the Department of Children's Welfare to have jurisdiction over the activities of the government relating to the health, educational opportunity and welfare of children in the United States. This bill, among other things, would transfer all functions, powers and duties vested in and imposed on the Secretary of Labor and the chief of the Children's Bureau with respect to the health, educational opportunity and welfare of children to the secretary of the new executive department proposed by this bill.

Water Pollution

H. R. 6024, introduced, by request, by Representative Mansfield, Texas, proposes a comprehensive program for the prevention and control of water pollution, including grants-in-aid or loans to states, municipalities and other public bodies for the construction of necessary treatment works.

Control of Barbiturates

S. 1986, introduced by Senator Bilbo, Mississippi, has been reported to the Senate with recommendation that it pass, proposing to regulate the manufacture, sale, distribution and use of the barbiturates in the District of Columbia. This bill would amend the existing narcotic law applicable to the District of Columbia by including the barbiturates among the drugs covered by it.

Miscellaneous

Representative Hope, Kansas, has introduced H. R. 5925, a bill to improve nutritional standards, reduce the cost of food distribution, provide a broader outlet for American farm products and promote scientific development of food processing, distribution and marketing by establishing a National Food Research Institute. H. R. 5909, introduced by Representative Rogers, Massachusetts, proposes to amend the Servicemen's Readjustment Act of 1944 by providing that any veteran entitled to a prosthetic appliance shall be furnished such fitting and training, including institutional training, in the use of such appliance, as may be necessary, whether in a Veterans Administration facility, other training institution or by outpatient treatment, including such service under contract. The veteran will be entitled to necessary traveling expenses and such per diem allowances as the administrator may determine, to the place or places of such fitting or training. Senator Pepper, Florida, has submitted S. Res. 244 proposing an additional appropriation of $50,000 for use by the Subcommittee on Health and Education of the Senate Committee on Education and Labor for further studies and surveys of the distribution and utilization of health personnel, facilities and related services. The Committee to Audit and Control the Contingent Expenses of the Senate has reported this resolution after reducing the appropriation to $40,000.

STATE LEGISLATION

Massachusetts

Bills Introduced.—H. 1185 proposes that all bottled medicines and tonics containing alcohol or drugs of any description shall be labeled in English so as to show the percentages of such ingredients. H. 1287 proposes to increase the scope of an existing special commission to include matters relative to establishing a medical school at the Massachusetts State College.

Bill Passed.—H. 1132 passed the senate April 2. To amend the law relating to actions for personal injuries, it proposes that a physician or surgeon who makes a physical or mental examination of an injured person in connection with any claim for damages for personal injuries shall be deemed to be the agent of the party for whose information the examination was made for the purpose of answering interrogatories.

Mississippi

Bill Introduced.—S. 46 proposes the creation of a memorial hospital commission to operate a war memorial hospital having a polio and cancer clinic and equipped to do research work in cancer and other diseases.

Bills Passed.—H. 430 passed the senate March 27. It proposes the creation of a Mississippi Commission on Hospital Care to set up and administer a statewide plan for the construction, equipping and maintenance of hospitals, nurses' homes, health centers, clinics and related facilities and in conjunction therewith to prepare a statewide hospital plan and to conduct all necessary studies and surveys incident to developing such a statewide hospital plan. H. 699 passed the house April 3. It proposes to authorize the state board of examiners to proceed by injunction to prohibit any person from practicing any profession licensed under the supervision of said board when such person is not duly licensed so to practice, except persons practicing chiropractic, osteopathic or veterinary sciences. H. 712 passed the house March 29. It proposes to provide for the incorporation of medical, surgical and other corporations organized for improving the physical, mental and moral condition of mankind. H. 1038 passed the house March 26. To amend the law relating to the hospitalization of charity patients, it proposes to increase the amount payable for hospitalization and surgical care and to provide that no hospital shall receive any funds provided for by this act unless such hospital shall have been inspected and approved by the state board of health.

Missouri

Bill Passed.—S. 343 passed the house March 26. It proposes the creation of a bipartisan board of six members to be known as the Missouri State Board of Medical Examination and Registration to register and license persons for the practice of medicine and surgery, midwifery and chiropody and proposes further to transfer the records now in the possession of the department of medical licensure of the state board of health of Missouri to the Missouri State Board of Medical Examination and Registration.

New Jersey

Bills Introduced.—A. 259, to amend the law relating to the practice of chiropody, proposes to add certain types of advertising to the grounds justifying the revocation or suspension of a license to practice chiropody. A. 262, relating to the practice of chiropody, proposes that no corporation formed for the primary purpose of practicing chiropody shall continue to practice and that no person shall practice or continue to practice chiropody as an officer, agent or employee of any corporation formed for the primary purpose of practicing chiropody or practice chiropody under any firm name or trade name or under any name other than his own.

Bills Passed.—A. 47 passed the assembly March 29. It proposes the establishment in the executive branch of the state government of a state department of health, the chief administrative officer of the department to be the state commissioner of health, who shall be a duly licensed physician, a graduate of a regularly chartered and legally constituted medical school, with at least five years' experience in the actual performance of public health duties, and with skill and experience in public health administration and sanitary science. A. 147 passed the senate April 1. It proposes that the holder of a license to practice a profession, the license or registration certificate of which was forfeited or lapsed because of the passage of time while the holder thereof was in the armed forces, shall be entitled, without examination or reexamination, within six months after his discharge, to a renewal or reinstatement of such license on payment of the lawful fee. A. 164 passed the senate April 2. To amend the medical practice act, it proposes an addition to the Board of Medical Examiners of a chiropodist to have equal rights and privileges in all matters affecting chiropody. A. 171 passed the assembly April 2. It proposes the creation of a Bureau of Cancer Control under the supervision of a director who shall be a duly licensed medical physician in the state qualified by training and experience to direct the work of cancer control and competent to administer cancer clinics. The bureau would establish four cancer clinics within the state, each one under the direction of a duly licensed medical physician.

New York

Bill Passed.—A. 2769 passed the house and senate March 26. To amend the code of criminal procedure, it proposes to authorize the judge of a court to appoint psychiatrists and qualified psychologists to attend such court when in the opinion of the judge such appearance might be necessary.

Bills Enacted.—A. R. 68 was adopted March 21. It provides for the creation of a joint legislative committee to make a survey and study of the social, educational and physical problems of individuals afflicted with cerebral palsy, with special attention to those whose muscle involvement is commonly referred to as (1) spasticity or (2) athetosis or (3) ataxia, and including those who have similar central motor or sensory defects. S. R. 22 was adopted March 26. It provides that the joint legislative committee to study nutrition problems is hereby further continued with all its powers and duties as contained in the original resolutions and that such committee shall submit its report, together with such legislative proposals as it may deem necessary, on or before March 1, 1947. Such investigations shall include a nutritional assay of a cross section of the children of the state, of expectant mothers, of factory and office workers and of the entire population. S. 821 has become chapter 320 of the Laws of 1946. To amend the penal law in relation to the right to dissect the dead body of a human being, it provides that the husband, wife or next of kin of the deceased, when authorizing a dissection, shall do so by written instrument which shall specify the purpose and extent of the dissection so authorized. S. 986 has become chapter 353 of the Laws of 1946. It provides for the creation of a temporary state commission to examine into the need for and to make recommendations relative to the creation of a state university.

South Carolina

Bills Enacted.—S. 101 has become chapter 818 of the Laws of 1946. It requires every physician attending a pregnant woman for a condition relating to pregnancy to take or cause to be taken a sample of her blood at the time of the first examination and to submit that sample to an approved laboratory for a standard serologic test for syphilis. S. 124 has become chapter 780 of the Laws of 1946. It provides for the creation of a South Carolina Hospital Commission to make a complete survey of the hospital, health centers and other related facilities in the state and to file reports and recommendations concerning the same to the next session of the general assembly.

Virginia

Bills Enacted.—H. 378 has become chapter 344 of the Laws of 1946. It provides regulations for the creation of local hospital or health center commissions. S. 64 has become chapter 355 of the Laws of 1946. It provides for the creation of a commission on postmortem examinations and the appointment of a chief medical examiner, who shall be a skilled pathologist and eligible to be licensed as a doctor of medicine. The chief medical examiner is to be provided with an office and laboratory having adequate professional and technical personnel and physical facilities for the conduct of postmortem examinations and of such pathologic, bacteriologic and toxicologic investigations as may be necessary or proper. Coroners throughout the state shall be appointed from a list of two or more licensed doctors of medicine submitted by the component medical society of the county or city in which the appointment is to be made. S. 238 has become chapter 281 of the Laws of 1946. It provides for the use in court of a certified clinical psychologist defined as a person skilled in making Binet-Simon or other approved mental tests and certified as a certified clinical psychologist by the commissioner of mental hygiene and hospitals.

Council on Medical Service and Public Relations

PREPAID MEDICAL CARE NEWS

Florida Medical Service Corporation Charter Approved

The application for charter of the Florida Medical Service Corporation has been approved by the state insurance commissioner, and the board of directors has been appointed. Florida Medical Service is a nonprofit corporation sponsored by the Florida Medical Association to provide a prepayment medical care plan for the people of the entire state.

In the beginning the plan is expected to offer surgical, obstetric, x-ray, laboratory and anesthesia benefits for in-hospital patients. Enrolment will be limited to groups of five or more persons. The suggested monthly premiums are: subscribers, 80 cents; family, $2, with a family defined as husband, wife and all unmarried children under 19 years of age.

The plan is a combination service-cash indemnity type. The income limits above which additional charges are permissible are $2,000 for unmarried subscribers and $3,000 for married subscribers. However, an additional charge may also be made to any subscriber "who shall (voluntarily) request and occupy private room accommodations in the hospital."

Administration will be handled by the Florida Hospital Service Plan.

The county medical societies have been asked to furnish (on a pro rata basis) the amount of money necessary for the corporation to function. The money will be advanced as a loan, with no interest, to be repaid when and if possible.

The officers and directors are Dr. Leigh F. Robinson, president; Dr. Walter C. Jones, vice president; Rev. E. D. Solomon, secretary; Dr. Frederick J. Waas, treasurer; Dr. W. Shaw, Dr. Duncan McEwan, Dr. Eugene G. Peek, Dr. Walter C. Payne, Dr. William M. Rowlett, Dr. Harrison A. Walker, Dr. Robert B. Harkness, Dr. Herbert C. White, Dr. Herman Watson, Mr. Dewey Dye, Mr. A. R. Cassidy, Mrs. Mildred Wells and Sister Loretta Mary.

Coming Medical Meetings

Alabama, Medical Association of the State of, Birmingham, April 16-18. Dr. Douglas L. Cannon, 519 Dexter Ave., Montgomery 4, Secretary.

American Association for Thoracic Surgery, Detroit, May 29-31. Dr. Richard H. Meade Jr., Kennedy General Hospital, Memphis 15, Tenn., Secretary.

American Association of Plastic Surgeons, Toronto, Canada, June 3-4. Dr. Frederick A. Figi, 102 Second Ave., S.W., Rochester, Minn., Secretary.

American Association of the History of Medicine, Atlantic City, May 26-27. Mr. W. B. McDaniel II, 19 S. 22d St., Philadelphia 3, Secretary.

American Broncho-Esophagological Association, Chicago, May 31. Dr. Paul H. Holinger, 700 N. Michigan Ave., Chicago 11, Secretary.

American College of Physicians, Philadelphia, May 13-17. Mr. E. R. Loveland, 4200 Pine St., Philadelphia 4, Executive Secretary.

American Federation for Clinical Research, Atlantic City, May 28. Dr. Richard H. Lyons, University Hospital, Ann Arbor, Mich., Secretary.

American Gastro-Enterological Association, Atlantic City, May 24-25. Dr. J. Arnold Bargen, 102 Second Ave., S. W., Rochester, Minn., Secretary.

American Laryngological Association, Chicago, May 29-30. Dr. Arthur W. Proetz, 3720 Washington Blvd., St. Louis 8, Secretary.

American Laryngological, Rhinological and Otological Society, Chicago, May 27-28. Dr. C. Stewart Nash, 277 Alexander St., Rochester 7, New York, Secretary.

American Otological Society, Chicago, May 31-June 1. Dr. Gordon D. Hoople, 713 E. Genesee St., Syracuse, N. Y., Secretary.

American Pediatric Society, Skytop, Pa., May 1-3. Dr. Hugh McCulloch, 325 N. Euclid Ave., St. Louis 8, Secretary.

American Psychiatric Association, Chicago, May 27-30. Dr. Winfred Overholser, St. Elizabeth's Hospital, Washington 20, D. C., Secretary.

American Society for Research in Psychosomatic Problems, New York, May 11-12. Dr. Edwin G. Zabriskie, 714 Madison Ave., New York 21, Secretary.

Arizona State Medical Association, Phoenix, May 2-3. Dr. Frank J. Milloy, 112 N. Central Ave., Phoenix, Secretary.

Arkansas Medical Society, Little Rock, April 14-15. Dr. W. R. Brooksher, 602 Garrison Ave., Fort Smith, Secretary.

Association of American Physicians, Atlantic City, May 28-29. Dr. Joseph T. Wearn, 2065 Adelbert Road, Cleveland 6, Secretary.

California Medical Association, Los Angeles, May 7-10. Dr. George H. Kress, 450 Sutter St., San Francisco 8, Secretary.

Central States Dermatological Society, Detroit, April 27. Dr. Clarence E. Reyner, Henry Ford Hospital, Detroit, Secretary.

Connecticut State Medical Society, Hartford, May 1-3. Dr. Creighton Barker, 258 Church St., New Haven 10, Secretary.

Florida Medical Association, Jacksonville, April 22-24. Dr. Robert B. McIver, P. O. Box 1018, Jacksonville, Secretary.

Georgia, Medical Association of, Macon, May 7-10. Dr. Edgar D. Shanks, 478 Peachtree St., N.E., Atlanta, Secretary.

Illinois State Medical Society, Chicago, May 14-16. Dr. Harold M. Camp, 224 S. Main St., Monmouth, Secretary.

Iowa State Medical Society, Des Moines, April 17-19. Dr. John C. Parsons, 406 Sixth Ave., Des Moines 9, Secretary.

Kansas Medical Society, Wichita, April 22-25. Dr. F. R. Croson, 112 W. Sixth St., Topeka, Secretary.

Louisiana State Medical Society, Alexandria, May 6-8. Dr. P. T. Talbot, 1430 Tulane Ave., New Orleans 13, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 23-24. Dr. W. Houston Toulson, 1211 Cathedral St., Baltimore 29, Secretary.

Massachusetts Medical Society, Boston, May 21-23. Dr. Michael A. Tighe, 8 Fenway, Boston, Secretary.

Minnesota State Medical Association, St. Paul, May 20-22. Dr. B. B. Souster, Lowry Medical Arts Bldg., St. Paul 2, Secretary.

Mississippi State Medical Association, Jackson, May 14-15. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

Nebraska State Medical Association, Lincoln, May 6-9. Dr. R. B. Adams, 416 Federal Securities Bldg., Lincoln 8, Secretary.

New Hampshire Medical Society, Manchester, May 14. Dr. C. R. Metcalf, 5 S. State St., Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, May 21-23. Dr. Alfred Stahl, 55 Lincoln Park, Newark, Secretary.

New York, Medical Society of the State of, New York, April 29-May 3. Dr. Walter P. Anderton, 292 Madison Ave., New York 17, Secretary.

North Carolina, Medical Society of the State of, Pinehurst, May 1-3. Dr. Roscoe D. McMillan, P. O. Box 232, Red Springs, Secretary.

North Dakota State Medical Association, Bismarck, May 26-28. Dr. L. W. Larson, 221 Fifth St., Bismarck, Secretary.

Ohio State Medical Association, Columbus, May 7-9. Mr. Charles S. Nelson, 79 E. State St., Columbus, Executive Secretary.

Rhode Island Medical Society, Providence, May 15-16. Dr. William P. Buffum, 122 Waterman St., Providence 6, Secretary.

Society of American Bacteriologists, Detroit, May 21-24. Dr. Leland W. Parr, 1335 H St., N. W., Washington 5, D. C., Secretary.

South Carolina Medical Association, Myrtle Beach, April 30-May 2. Dr. Julian P. Price, 105 W. Cheves St., Florence, Secretary.

South Dakota State Medical Association, Aberdeen, June 1-4. Dr. Roland G. Mayer, 22½ S. Main St., Aberdeen, Secretary.

Texas, State Medical Association of, Galveston, May 6-9. Dr. Holman Taylor, 1404 W. El Paso St., Fort Worth 3, Secretary.

West Virginia Medical Association, Huntington, May 13-15. Mr. Charles Lively, P. O. Box 1031, Charleston 24, Executive Secretary.

Medical News

(Physicians will confer a favor by sending for this department items of news of more or less general interest: such as relate to society activities, new hospitals, education and public health.)

CALIFORNIA

Fund for Cancer Research.—The Jewish Fund for Medical Research has given $40,000 to the University of California for cancer research on the Los Angeles campus, according to the university Clip Sheet. Part of the fund will be used for a special building on the Los Angeles campus and will be designed to facilitate expansion of a cancer research project already in progress and results of which are pronounced "encouraging" by Harry S. Penn, research associate in zoology, who is directing the work. The Jewish Fund for Cancer Research was incorporated June 28, 1943 under the laws of the District of Columbia. The trustees are Edmond I. Kaufmann, Cecil D. Kaufmann and Marcus S. Goldnamer, all of Washington, D. C. The work sponsored by the fund has been in progress by the university about two years.

FLORIDA

State Medical Meeting.—The seventy-second meeting of the Florida Medical Association will be held at the George Washington Hotel, Jacksonville, April 22-24, under the presidency of Dr. John R. Boling, Tampa. Among the speakers will be:

Dr. Frank K. Boland, Progress in Abdominal Surgery.
Dr. Wilson T. Sowder, Jacksonville, Public Health Problems in Florida.
Dr. William O. Fowler, Orlando, Pulmonary Resection in Nontuberculous Diseases of the Chest.
Dr. George D. K. Lilly, Miami, Peripheral Vascular Disease.
Dr. Vernon A. Lockwood, St. Augustine, Abdominal Incisions and Suture Materials.
Dr. Richard F. Stover, Miami, Significance of Soft Tissue Injuries.
Dr. Alfred M. Bidwell, Tampa, Treatment of Sacroiliac Sprain by Manipulation.
Dr. James L. Borland, Jacksonville, Principles Governing the Treatment of Amebic Infection in the Intestine.
Dr. Alvyn W. White, Pensacola, Infantile Scurvy.
Dr. James N. Patterson, Tampa, The Role of the Rh Factors in Clinical Medicine.

Other groups meeting include:

Florida section of the American College of Physicians.
Florida Railway Surgeons.
Florida Society of Ophthalmology and Otolaryngology.
Florida Association of Industrial Surgeons.
Florida Pathological Society.
Florida Pediatric Society.
Florida Health Officers' Society.
Florida Radiological Society.
Florida Society of Dermatology and Syphilology.

The nineteenth meeting of the Woman's Auxiliary of the Florida Medical Association will also be held.

ILLINOIS

New Health Officer of Peoria County.—Dr. Harry R. Marlatt, Peoria Heights, assistant city health officer, has been named health officer of the newly organized full time Peoria County health unit. A seven member board has been set up with Earl E. Downing, Elmwood, county superintendent of schools, as president.

Chicago

Cutter Memorial.—The Spring Quarterly Bulletin of Northwestern University Medical School has been designated the Irving S. Cutter number in honor of the former dean of the medical school, who died in 1945.

The Hamburger Lecture.—Dr. Samuel A. Levine, assistant professor of medicine, Harvard Medical School, Boston, will give the third Walter Wile Hamburger Memorial Lecture of the Institute of Medicine of Chicago, May 24, at the Palmer House. His subject will be "The Treatment of Congestive Heart Failure."

Service Club Pledges $150,000 to Hospital.—Mount Sinai Hospital Service Club, an organization which was associated with Mount Sinai Hospital for over twenty-five years, recently pledged $150,000 payable in yearly instalments of $15,000 to support research at Mount Sinai Hospital under the direction of Dr. Israel Davidsohn, director of laboratories and pathologist to the hospital.

Personal.—Dr. Frederick Steigmann, assistant professor of medicine, University of Illinois College of Medicine, who before entering the medical corps of the U. S. Naval Reserve was director of therapeutics at the Cook County Hospital and associate director of the Ludvig Hektoen Institute for Medical Research of Cook County in charge of clinical investigation, has returned from active service and resumed his former duties.

Brochure on Hektoen Institute.—A brochure on the Hektoen Institute for Medical Research of Cook County has recently been made available. It contains photographs of the institute at 629 South Wood Street and one of Dr. Ludvig Hektoen, for whom the institute is named. A complete review of the institute's history and proposed activities is also contained in the booklet as well as a biography of Dr. Hektoen.

Dr. Hollender Retires as Professor Emeritus.—Dr. Abraham R. Hollender, Miami Beach, Fla., who until recently was acting head of the department of otolaryngology, the University of Illinois College of Medicine, has been granted retirement by the university with the rank of professor of otolaryngology emeritus, effective February 1. Dr. Hollender has resumed practice in Miami Beach, Fla.

Physician Bequeaths $50,000 to Michael Reese Hospital.—The late Dr. Lester E. Frankenthal bequeathed $50,000 to Michael Reese Hospital, where he first became associated as intern in 1883, joining the staff six years later. His wife, Mrs. Ann E. Nourse Frankenthal, a graduate of St. Luke's Hospital, founded the Michael Reese Hospital School of Nursing in 1890 and was its first director. Dr. Frankenthal became senior attending physician in obstetrics and gynecology in 1924 and remained on the staff until his death. His son, Dr. Lester E. Frankenthal Jr., has been a member of the department of obstetrics and gynecology since 1927. Dr. Frankenthal died Dec. 19, 1945, aged 81.

INDIANA

Personal.—Dr. Schuyler F. Teaford, Paoli, has resigned as health officer of Orange County.——Dr. Newton W. Larkum, recently released from the Army Medical Corps, has been appointed medical director of the Ames Company, Inc.——Dr. Edwin R. Smith, Indianapolis, has been appointed a member of the Indiana council for mental health, filling a vacancy that occurred with the death of Dr. Larue D. Carter.——Dr. Walter Stoeffler, Indianapolis, has been named pediatric consultant in the division of maternal and child health, Indiana State Board of Health.

State Geriatrics Institute.——A one day geriatrics institute sponsored by the Indiana University School of Medicine, Indianapolis, and the Indiana State Board of Health will be held in the auditorium of the university May 22. The purpose of the institute is to study the process of aging, the problems of the aged and the more common diseases and disabilities associated with aging. In attendance will be physicians interested in geriatrics, educators, dentists, nurses, social workers, representatives of industry and labor and, in fact, all who may have an interest in the medical, social and economic problems connected with the rapidly increasing age of our population. The forenoon session of the institute will be devoted to a discussion of health guidance in maturity, mental hygiene and geriatrics, with a symposium on diseases of advancing years, including cardiovascular renal diseases, arthritis, cancer, eye and ear diseases and endocrine therapy with Dr. Willis D. Gatch, dean of the university, presiding. With Dr. Leroy E. Burney, state health commissioner, presiding, the afternoon program will be devoted to an address on geriatric medicine by Dr. Edward J. Stieglitz, Washington, D. C., consultant in gerontology to the National Institute of Health. As an additional feature, aging as an industrial health problem will be discussed by a representative of labor, a representative of management and an industrial physician. A public meeting will be held in the evening. All the facilities of the Indiana University School of Medicine and of the state board of health will be devoted to making this institute a success and in creating a widespread interest, both professional and public, in the purpose of the institute. A division of adult hygiene and geriatrics was recently created in the state department of health with Dr. William F. King, Indianapolis, as director (The Journal, February 9, p. 361).

LOUISIANA

Student Awards for Published Articles.—Beginning with volume 8, the *Journal of the Louisiana State University School of Medicine* will offer to the student body two awards of $25 each for articles submitted for publication. Volume 8 of the journal will begin with the March issue.

MARYLAND

State Medical Meeting.—The Medical and Chirurgical Faculty of Maryland will hold its meeting at the Belvedere Hotel, Baltimore, April 23-24, under the presidency of Dr. Thomas R. Chambers, Baltimore, who will discuss "Postwar Asthenia." Among the speakers will be:

Dr. Nicholson J. Eastman, Baltimore, Median versus Lateral Episiotomy.
Drs. John Mason Hundley Jr. and Beverly C. Compton, both of Baltimore, Carcinoma of the Cervix.
Dr. John A. C. Colston, Baltimore, Carcinoma of the Prostate: Endocrine Therapy and the Radical Operation.
Dr. Charles Lagley Jr., Baltimore, The Story of Cerebral Injuries.
Dr. Alan C. Woods, Baltimore, Early Treatment of Eye Injuries.
Dr. William J. Fulton, Detroit, Doctor in Industry.
Dr. Wallace M. Yater, Washington, D. C., Coronary Artery Disease in Young Men—A Study of 400 Cases Proved at Necropsy.
Dr. John T. King, Baltimore, Acute Cardiac Disorder Simulated by Pulmonary Embolism.
Dr. Alfred Blalock, Baltimore, The Surgical Treatment of Pulmonary Stenosis.
Dr. Arthur W. Allen, Boston, Venous Thrombosis and Pulmonary Embolism: A Comparative Study of Femoral Vein Interruption and Dicumarol Therapy.
Dr. Harry M. Robinson Jr., Baltimore, Common Dermatologic Problems Presented by the Veteran.
Dr. Henry M. Fox, Boston, Brief Psychotherapy Overseas and at Home.
Dr. Maurice C. Pincoffs, Baltimore, Medical Problems in the Southwest Pacific Area.
Dr. Harvey B. Stone, Baltimore, The Handling of Large Hemorrhages into the Bowel.
Dr. George H. Yeager, Baltimore, Noninfective Gangrene Following Fracture of Lower Leg.
Dr. Perrin H. Long, Baltimore, The Etiology and Epidemiology of Infectious Hepatitis.
Dr. Harry C. Hull, Baltimore, Visualization of Amebic Abscesses of the Liver as an Aid to Therapy and Prognosis.
Dr. Joseph E. Moore, Baltimore, Penicillin in the Treatment of Syphilis.
Dr. Theodore E. Woodward, Baltimore, Chemotherapy in the Rickettsial Diseases, with Special Reference to Para-Aminobenzoic Acid.

On Wednesday evening at a public meeting Dr. Warfield T. Longcope, who is retiring as professor of medicine, Johns Hopkins University School of Medicine, Baltimore (The Journal, January 26, p. 231), will deliver the Trimble Lecture on "The Treatment of Metallic Poisoning by BAL (British Antilewisite)." A meeting will also be held Wednesday to honor Marcia C. Noyes, who has been librarian for the faculty for fifty years and executive secretary of the state association for twenty years. Miss Noyes was employed by the late Bernard C. Steiner, then librarian at Pratt Library, who in 1896 recommended her services to Dr. William Osler, who had just succeeded in having moved from the basement of the Athenaeum the library of the Medical and Chirurgical Faculty. The program of the faculty also includes round table discussions.

MICHIGAN

Cancer Day.—On March 20 the Genesee County Medical Society inaugurated an annual Cancer Day in Flint. Among the speakers were:

Dr. Paul A. O'Leary, Rochester, Minn., Cutaneous Malignancy.
Dr. Louis E. Phaneuf, Boston, Cancer of the Uterus.
Dr. Frederick A. Coller, Ann Arbor, Cancer of the Stomach.
Dr. Charles B. Huggins, Chicago, Cancer of the Genitourinary Tract.
Dr. Frank E. Adair, New York, Cancer of the Breast.
Mr. Elmer H. Bobst, New York, The Cancer Problem in America.

Udo Wile Honored.—Dr. Udo J. Wile, professor of preventive medicine and public health, University of Michigan Medical School, Ann Arbor, was recently made a "Commander of the Order of Public Health," a decoration which had previously been issued to two other persons, one of whom is Sir Alexander Fleming. The decoration was awarded to Dr. Wile by the French minister of health for his service while in France in instituting a venereal disease program. Dr. Wile recently returned from France.

Course for Practitioners.—Dr. Frederick A. Coller, professor of surgery, and the chiefs of the various divisions at the University Hospital, University of Michigan Medical School, Ann Arbor, will offer a course for returning medical veterans who are general practitioners. Subject material to be presented in clinics, lectures, demonstrations and ward rounds will include minor surgery in office practice, nonoperative gynecology and obstetrics, otolaryngology and ophthalmology, dermatologic lesions, burns, general medical practice, infectious diseases, treatment of venereal diseases, pediatric practice, neurology and psychiatry. The teaching schedule may be obtained on request. The course will begin April 29 and end June 22.

Koch Dismissal Denied by Court.—Federal Judge Robert R. Nevin on March 11 overruled a defense motion to dismiss charges of mislabeling and misbranding purported cancer cures, for which Dr. William F. Koch, Detroit, and his brother Louis and the Koch Laboratories are on trial. Judge Nevin also ruled against a motion to strike out all testimony pertaining to malonic and glyoxylic acids, both of which concoctions, the prosecution claims, duplicate the Koch products malonide and glyoxylide. The motion to drop the charges was filed February 19, but the court had deferred ruling until sufficient evidence had been heard to support government claims, according to the Detroit *Times*.

Curative Workshop.—The Curative Workshop with quarters at 65 Ferry Avenue, West Detroit, was recently incorporated as an independent organization. The workshop has been approved by the Wayne County Medical Society, which has also named the medical advisory committee, including Drs. Wyman D. Barrett, chairman; Leo H. Bartemeier, Arbie L. Brooks, Ralph E. Hall, Clyde N. Hasley, James W. Lasley, John J. Prendergast Jr., Frank H. Purcell, Robert J. Schneck and Francis Walsh, all of Detroit, and Earle A. Irvin, Grosse Pointe. The present workshop is an outgrowth of the program started in 1934 by the Visiting Nurses Association. The present activity was evolved in March 1945, when representatives of the board of the Visiting Nurses Association and the Detroit Orthopaedic Clinic consulted with the Wayne County Medical Society. Miss Helen King is technical director of the Curative Workshop.

MINNESOTA

New County Bulletin.—The St. Louis County Medical Society is now publishing its own bulletin. In the four issues thus far published are contained announcements and news of returning members. Officers of the society are Drs. Daniel W. Wheeler, Duluth, president-elect; Paul G. Boman, Duluth, president; Francis W. Bachnik, Hibbing, vice president; Elizabeth C. Bagley, Duluth, secretary-treasurer, and Mrs. Margaret B. Gilbert, executive secretary.

NEW YORK

Alpha Omega Alpha Lectures.—Dr. Robert H. Williams, instructor in medicine, Harvard Medical School, Boston, gave the spring lecture of Alpha Omega Alpha at Syracuse University College of Medicine on March 7. His lecture was on "Recent Studies of the Physiology and Treatment of Thyrotoxicosis."——Dr. Carl A. L. Binger, New York, gave the annual address of the Alpha Omega Alpha Society, University of Rochester School of Medicine and Dentistry, March 15, on "The Doctor's Dilemma."

Training for Psychiatrists.—On March 23 the New York State Department of Mental Hygiene announced the establishment of a program to train physicians in psychiatry and neurology to meet the unprecedented need for increased medical personnel for hospital and outpatient treatment of persons suffering from mental and nervous diseases. Provision has accordingly been made for the training of a hundred physicians through courses which were to begin on April 5. These doctors will be added to the staffs of all the department's mental hospitals and the state schools for the mentally deficient, where they will serve as resident physicians while in training. The program will be inaugurated with courses set up at the New York State Psychiatric Institute and Hospital in New York City in conjunction with the Columbia University College of Physicians and Surgeons and at the Syracuse Psychopathic Hospital in conjunction with Syracuse University College of Medicine. The courses, starting April 5 in New York and May 3 in Syracuse, will continue weekly for forty-eight weeks. They will consist of lectures, clinical conferences and laboratory work and will meet the primary requirements of the American Board of Psychiatry and Neurology. Formal instruction will be supplemented by supervised clinical work at the resident's institution. Dr. Frederick MacCurdy, state commissioner of mental hygiene, in announcing the program, stated that in normal times there were some 3,500 trained psychiatrists in the United States and that it has been conservatively estimated that at least three times as many could be used to advantage at the present time.

New York City

Special Lectures.—Dr. Ernest Laqueur, Institute of Pharmacotherapy, Amsterdam, will deliver the seventh Harvey Society Lecture of the current series at the New York Academy of Medicine, April 18. Dr. Laqueur will speak on "Interrelationships Between Gonadotropic and Sex Hormones."——Dr. Isidor Snapper will discuss "Bone Diseases" before the New York Institute of Clinical Oral Pathology, April 29, at the New York Academy of Medicine.

History of Medicine in Art.—An exhibition of the history of medicine in art will open April 15 at New York University College of Medicine. The prints are from a collection of more than 1,000 owned by Dr. Clements C. Fry of the department of health, Yale University School of Medicine, New Haven, who has been collecting medical prints since 1927. Many of his earliest examples were acquired from the collection of Dr. Eugen Hollander, who wrote extensively on the history of medical caricature. The exhibition will include prints displayed recently at the National Gallery of Art, Washington, D. C., and others selected by Dr. Fry from his collection especially from New York University's showing. The exhibit will close April 27. Several early fifteenth century woodcuts representing cures by faith and works of Lucas van Leyden, Pierre van der Borcht, van Ostade and Rembrandt in the sixteenth and seventeenth centuries will be shown. Emphasis falls on the eighteenth century, when charlatans and quacks were popular targets for satire. Examples include caricatures by Rowlandson and Woodward and an unusual colored aquatint by L'Eveille. Prints by Daumier, Boilly and Cruikshank are among those on medical subjects in nineteenth century art. Among the examples of contemporary art are two drawings by Darrow and Petty satirizing interest in psychoanalysis.

OHIO

Dr. Hudson Named Dean of State Graduate School.—Dr. N. Paul Hudson, professor and chairman of the department of bacteriology, Ohio State University College of Medicine, Columbus, and the university graduate school, has been named dean of the graduate school to succeed Alpheus W. Smith, Ph.D., who will retire August 31. Dr. Hudson, who graduated at Harvard Medical School, Boston, in 1925, has served at different times as instructor at the University of Chicago, assistant pathologist, Boston City Hospital, field director in yellow fever with the International Health Division, Rockefeller Foundation, West Africa, and professor of bacteriology and hygiene at the University of Chicago. He has been associated with the Ohio State University since 1935.

Changes in Biochemistry at Western Reserve.—Harland G. Wood, Ph.D., associate professor of physiologic chemistry, University of Minnesota, Minneapolis, will head the department of biochemistry, Western Reserve University, Cleveland, which has received a $500,000 gift to expand its work. Dr. Wood, who will occupy his new position on July 1, has done notable research in physiologic bacteriology, the biochemistry of bacteria and more recently with isotopes in the study of the roles various chemical elements play in metabolism of nerve tissue in infantile paralysis. He will succeed Victor C. Myers, Ph.D., who has been named head of the newly created department of clinical biochemistry at the school of medicine. The gift of $500,000 from the Elisabeth Severance Prentiss Foundation has made it possible to bring in Dr. Wood and with him leadership in the newer fields of biochemistry. Dr. Wood's staff of assistants and associates will be announced later, but it will be adequate to enable the school of medicine to carry on large scale work in the chemistry of living processes. Dr. Wood, who won the annual Eli Lilly Award for his work in biochemistry of bacteria in 1942 (THE JOURNAL, Feb. 13, 1943, p. 531), graduated at Macalester College, St. Paul, in 1931.

OREGON

Executive Secretary for Multnomah County.—Mr. Richard K. Stanton, Spokane, Wash., on terminal leave with the rank of lieutenant from the U. S. Naval Reserve after four years' service, has been appointed executive secretary of the Multnomah County Medical Society, effective May 1. This is a newly created position. Mr. Stanton, who graduated at the University of Idaho in 1934 and who has an M.A. degree from Stanford University, has had varied experience in newspaper work, public relations and advertising agencies. His address will be the University Club, Portland.

VIRGINIA

Hospital News.—Raiford Hospital, Franklin, was recently opened with a capacity of 80 beds. The hospital is named for Dr. Rufus L. Raiford, Franklin, who founded its "predecessor institution some years ago."

Physician Honored.—The Chatham Lions Club recently selected Dr. Oscar L. Ramsey, Gretna, as the most valuable citizen of 1945 of Pittsylvania County. The citation designating Dr. Ramsey stated that he had given unsparingly of his time "in doing for others."

Chiropractors and Naturopaths Not Exempted from State Examinations.—At the present session of the general assembly the chiropractors and naturopaths presented a bill requesting an amendment to the healing arts act of 1944 to write in a "grandfather" clause permitting all chiropractors and naturopaths practicing in Virginia at that time permanent exemption from examinations by the state board of medical examiners, according to the *Virginia Medical Monthly*. This came up on the floor of the senate and, after discussion, was voted down by a vote of 22 to 15. In 1944 they had been given five years in which to comply with the law.

GENERAL

Radiologic Conference.—The midsummer radiologic conference of the Rocky Mountain Radiological Society will be held August 8-10 at the Shirley Savoy Hotel, Denver. Dr. Leonard G. Crosby, Denver, is president and Dr. Alfred M. Popma, Boise, Idaho, secretary-treasurer.

Cancer Campaign.—With April designated by an act of Congress as Cancer Control Month, the American Cancer Society launched its campaign on April 1 to obtain $12,000,000. A dinner in New York officially opened the program. A feature of the campaign will be the collections in motion picture theaters throughout the country during the week of April 21 and continuing for eight consecutive days. A trailer made in Hollywood features Spencer Tracy in a stirring appeal for funds to fight against cancer.

Special Society Elections.—Dr. Stuart Mudd, Philadelphia, was recently elected president of the American-Soviet Medical Society, filling the vacancy that occurred when Dr. Walter B. Cannon died. Dr. Abraham Stone, New York, is the corresponding secretary.——Dr. John S. LaDue, New York, has been elected chairman of the eastern section and Dr. Robert H. Bayley, Oklahoma City, of the southern section of the American Federation for Clinical Research. Dr. Richard H. Lyons, University Hospital, Ann Arbor, Mich., is secretary-treasurer of the American Federation for Clinical Research, which will hold its meeting in Atlantic City, May 28.

Medical Directors of Red Cross.—Dr. Asa Barnes has been transferred from the national headquarters of the American National Red Cross, Washington, D. C., to San Francisco as medical director in charge of the Pacific area office. Dr. Courtney M. Smith is acting medical director in the Washington headquarters. Other area medical directors include:

Dr. Harry E. Kleinschmidt, North Atlantic Area Office, 300 Fourth Avenue, New York 10.

Dr. Ollie M. Goodloe, Eastern Area Office, 615 North St. Asaph Street, Alexandria, Va.

Dr. John M. Walton, Southeastern Area, Office, 230 Spring Street N.W., Atlanta 3, Ga.

Dr. Raymond F Barnes, Midwestern Area Office, 1709 Washington Avenue, St. Louis 3.

Marquard Finds Gebhard with Aid of The Journal.—On March 22 Dr. Bruno Gebhard, director of the Cleveland Health Museum, received a letter from Dr. Kurt Marquard, medical officer in the German army. The two physicians had been close friends at one time but had lost track of each other. Dr. Marquard, who had been captured in the allied drive, was assigned to inspection of sanitary conditions in a prison camp in France. While on tour he noticed a copy of THE JOURNAL for March 3, 1945 in some discarded papers. In it he found an article on "Community Health Education by the Medical Profession" by his friend Dr. Gebhard, to whom he immediately wrote, reestablishing relations that had been terminated when Dr. Gebhard came to this country in 1937.

Dean of Beirut University Visits United States.—James O. Pinkston, Ph D., dean of the medical division of the American University of Beirut, Lebanon, recently arrived in the United States to help raise funds for the $2,500,000 expansion program of the medical division and to recruit faculty members. The American University of Beirut, one of the eight colleges affiliated in the Near East College Association, was founded in 1866 with a charter from the state of New York. Its medical school, which opened a year later, has given a four year course of training to more than a thousand doctors and has also graduated hundreds of nurses. The university is said to be the largest American educational institution outside the United States. It offers education to men and women without regard to religion, race, nationality or color. Most graduates of the medical school practice in Lebanon, Syria, Palestine, Trans-Jordan and Iraq. Students come to the school from these countries as well as from Sudan, Iran, India, East Africa, Greece, Albania, Egypt and the United States. The proposed project was described in THE JOURNAL Dec. 29, 1945, page 1279.

LATIN AMERICA

Health Activities in Latin America.—*Hospital News.*—A new 108 bed tuberculosis hospital is scheduled to be ready for occupancy in October in Tegucigalpa, Honduras. It is being constructed jointly by the government of Honduras and the Institute of Inter-American Affairs, Washington, D. C.

Peruvian Health News.—The president of Peru recently appointed a seven man commission to draft plans for reorganizing the National Department of Health. Among the major changes already recommended are decentralization of all health functions by the establishment of departments (corresponding to the states in the United States) and district health departments, establishment of requirements that all public health officials be trained in public health before appointment and establishment of full time work for all public health officials. Dr. Ernest B. Howard, Boston, has been named chief of the field party in Peru, succeeding Dr. Edward A. Westphal, who has returned to Glendale, Calif., to engage in private practice. The health program in Peru was originally established for the two year period July 1942 to July 1944. In March 1944 the United States and the republic of Peru entered into an agreement to extend the program for another three years, that is from July 1944 to July 1947. To finance this program the Institute of Inter-American Affairs is contributing $1,850,000 and the government of Peru $672,388. The government of Peru is also contributing facilities, equipment and material. Among the projects undertaken were the establishment of seven hospitals, four dispensaries, four health centers, twenty-seven medical posts and one mobile dispensary. Except for one dispensary the provision of each of these health facilities involved the construction of a building or the extensive remodeling of one in existence.

New Publication on Tropical Medicine.—*Revista Kuba* recently made its appearance in Havana, Cuba. It will be devoted to parasitology and tropical diseases and will be published monthly under the direction of Drs. Pedro Kouri Esmeja and Jose G. Basnuevo Artiles, professors of parasitology and tropical medicine at the University of Havana. The address is Revista Kuba, Apartado #899, Havana, Cuba.

Pan American Congress of Ophthalmology.—At the business meeting of the second Pan American Congress of Ophthalmology in Montevideo, Uruguay, Nov. 26-Dec. 1, 1945 it was decided to establish a committee on education to survey conditions of the teaching of ophthalmology in several study centers in Latin America, establishing an exchange of professors, assistants and pupils, establish correspondence courses and establish boards similar to that of the American Board of Ophthalmology or of courses for the information of ophthalmologists in the medical schools. It was agreed that a committee would be named to carry out the measures proposed by the committee in education. The boards that would be formed would be charged with organizing sectional meetings in the years when no Pan American Congress was scheduled. The program includes the hope that there will be established a "central exchange" through which ophthalmologists throughout the continent may obtain complete bibliographic information. The committee on education includes Dr. Jorge Valdeavellano (Arequipa 149, Lima, Peru), president; Dr. Thomas D. Allen, Chicago, representing North America (Canada and the United States); Dr. Miguel A. Branly, Havana, representing Central America (Mexico, Panama, Nicaragua, Guatemala, Honduras, Costa Rica, Cuba, Haiti, San Salvador, Dominican Republic, Venezuela and Columbia), and Dr. Rodriguez Barrios, Montevideo, Uruguay, representing South America (Ecuador, Peru, Paraguay, Uruguay, Bolivia, Chile, Argentina and Brazil).

Society News.—New officers of the "Colegio Medico de El Salvador" include Dr. Carlos Gonzalez B., president; Dr. Esteban Reyes, vice president; Dr. Gregorio Avila Agacio, secretary; Dr. Margaret de Beneke, undersecretary, and Dr. Alfredo Sanchez-Mairena, treasurer.

Changes in Personnel in Health and Sanitation Division.—Dr. Walter M. Smith, formerly of Little Rock, Ark., Major, M. C., Army of the United States, associate chief of party, Mission Sanitaire Americaine in Haiti, has become director of the Yaws program in Haiti, succeeding Dr. James H. Dwinelle, who plans to return to private practice in Rye, N. Y.——Dr. Frank R. Neff, recently released from the Army of the United States with the rank of lieutenant colonel, joined the staff of the Institute of Inter-American Affairs in January and has been assigned as associate chief of field party for Costa Rica. Dr. Erwin F. Hoffman, formerly of Jacksonville, Fla., has been named chief of party in Nicaragua to succeed Dr. Leonard S. Rosenfeld, formerly of Brooklyn.

Government Services

New Library Chief

Max H. Fisch, formerly curator of the rare book collection, Cleveland Branch of the Army Medical Library, has been made chief of the branch which is known as the history of medicine division.

Annual Reports of Government Agencies

Annual reports of various governmental services have recently been made available, including those for the U. S. Public Health Service, Veterans Administration, Food and Drug Administration and Federal Security Agency, for the fiscal year ending June 1945. The annual report of the Gorgas Memorial Laboratory for the fiscal year of 1944 has also been published.

Liaison Officer Named

Surgeon Norvin C. Kiefer, Geneva, Ohio, has been appointed to serve in the office of the chief, Tuberculosis Control Division, U. S. Public Health Service, as vocational rehabilitation liaison officer with the vocation rehabilitation division of the U. S. Office of Education. Dr. Kiefer graduated at the University of Michigan Medical School, Ann Arbor, in 1930.

Colonel Dart Goes to Institute of Pathology

Col. Raymond O. Dart, deputy chief surgeon for the Army Forces in the Western Pacific, has been appointed assistant director of administration at the Army Institute of Pathology. Colonel Dart has been awarded the Legion of Merit and the Bronze Star for his services since going to the Pacific in 1942 as commanding officer of the 105th General Hospital, an affiliated unit of Harvard University. Dr. Dart graduated at Rush Medical College in 1916.

Research on the Common Cold

A prolonged study of the common cold will start about July 1 at the National Institute of Health, U. S. Public Health Service, Bethesda, Md. About $50,000 has been earmarked to begin the project, which will continue until the prevention and the cure of the common cold are determined. A common cold unit will be set up in the division of infectious diseases. Dr. Rolla E. Dyer is director of the National Institute of Health.

Fellowships for Health Education

Fellowships for a year of graduate study in health education at one of the leading schools of public health are being offered by the U. S. Public Health Service through funds made available by the National Foundation for Infantile Paralysis, according to Surg. Gen. Thomas Parran, U. S. Public Health Service, Federal Security Agency, Washington. Tuition, travel expenses for field experience and a stipend of $100 a month are provided. The training, which leads to a master's degree in public health from an accredited school of public health, starts with the fall quarter of 1946. Men and women between the ages of 22 and 40 who are citizens of the United States and who can meet the entrance requirements of the school of public health of their choice are eligible to make application. Candidates must hold a bachelor's degree from a recognized college or university and must have had some work experience in a related field. Previous training in the biologic or physical sciences, sociology and education is usually required. Veterans are encouraged to apply for fellowships. Subsistence allowance under the G. I. Bill of Rights will be supplemented by fellowship funds to provide a total stipend of $100 a month. Training consists in nine months of academic study in public health, health education, community organization and information technics and three months of supervised field experience in community health education. Persons accepting fellowships are expected to work in the field of health education for at least two years after the training period. Schools of public health are located at Columbia University, Harvard University, Johns Hopkins University, the University of California, the University of Michigan, the University of Minnesota, the University of North Carolina and Yale University. Application forms may be obtained from the Surgeon General, U. S. Public Health Service, Washington 25, D. C. Completed applications must be filed by June 1 for consideration.

Deaths

John Shelton Horsley ⊕ a leader in the advancement of surgery, died at his home in Richmond, Va., April 7, aged 75.

Dr. Horsley was born in Lovingston, Va., Nov. 24, 1870. After graduation at the University of Virginia Department of Medicine, Charlottesville, in 1892 he took postgraduate work in New York and started the practice of medicine in Nelson County, Va. He moved to Staunton in 1894 but in 1896 he returned to New York. From 1899 to 1903 he practiced in El Paso, Texas, acting as proprietor and surgeon in chief of St. Luke's Hospital. Then he went to the Medical College of Virginia, Richmond, and served as professor of the principles of surgery until 1912.

Dr. Horsley was a fellow of numerous scientific groups, including the American and Southern surgical associations. He served the American Medical Association as a member of the House of Delegates from 1908 to 1910 and 1913 to 1914, chairman of the Section on Surgery, General and Abdominal, member of the Council on Scientific Assembly from 1915, when it was created, to 1930, holding the chairmanship from 1919 to 1930. He had been a member of the founders group of the American Board of Surgery. He had once been president of the Richmond Academy of Medicine, Medical Society of Virginia, Southern Medical Association, the Virginia Academy of Science and the American Association for the Study of Neoplastic Diseases. He was an honorary member of the St. Louis Medical Society, a member of the Virginia State Hospital Board, a former vice president of the Tri-State Medical Association of the Carolinas and Virginia and a corresponding fellow of the Medical Society of London.

As a past president of the Virginia Cancer Foundation and a member of the National Advisory Cancer Council he was arduous in his support of educational activities against cancer. He had received numerous honors for his work as a surgeon, including the gold medal of the Southern Medical Association for his work on the surgery of blood vessels and intestine and, at five different times, certificates from the American Medical Association for similar work. Honorary degrees were awarded to him, and in 1936 his portrait was unveiled during special ceremonies of the Ex-Interns Association of St. Elizabeth's Hospital, where he had been surgeon-in-chief for many years. He in turn had set up a memorial to his father in the department of medicine at the University of Virginia for research on general surgery and was instrumental in the establishment of prizes for papers by staff members of the Virginia state hospitals

JOHN SHELTON HORSLEY, 1870-1946

Throughout his life Dr. Horsley contributed extensively to the medical literature; he served as associate editor of Lewis's Practice of Surgery and was the author of Surgery of Blood Vessels, Operative Surgery, Surgery of Stomach and Small Intestine, Research and Medical Progress, and Surgery of Stomach and Duodenum.

Luther Leonidas Hill ⊕ distinguished surgeon and father of Senator Lister Hill, died at his home in Montgomery, Ala., April 4, aged 84

Dr. Hill was born in Montgomery Jan. 22, 1862. His early education was received at the school of Professor George Thomas, Montgomery, and at Howard College, then at Marion. He graduated at the University of the City of New York Medical Department in 1881 and at the Jefferson Medical College of Philadelphia in 1882. His numerous postgraduate studies included work with Lord Lister at the King's College Hospital, London.

Dr. Hill started the active practice of medicine in Montgomery in 1884. He became county physician in 1893 and was visiting surgeon of Laura Hill Hospital from 1897 to 1932. He had also been visiting surgeon of St. Margaret's Hospital and surgeon of the Mobile and Ohio Railroad, surgeon general of the Alabama National Guard and surgeon of the Second Alabama Regiment. Dr. Hill was president of the Montgomery Board of Health in 1893 and president of the United States Board of Pension Examiners in 1897.

In 1932 he was given a banquet by the Montgomery County Medical Society and presented with a silver cup to mark his completion of fifty years in the practice of medicine. In 1939 he was awarded a citation by the Medical Association of the State of Alabama for first successfully suturing a heart wound in the United States in 1902, a surgical accomplishment on which he made many successful improvements in subsequent years.

He was a fellow of the American College of Surgeons and a past president and life councilor of the Medical Association of the State of Alabama. He was also a past president of the Montgomery Medical and Surgical Society.

William Gilliam Kennon ⊕ Nashville, Tenn.; University of Pennsylvania Department of Medicine, Philadelphia, 1908; born in Sublets, Va., Oct. 25, 1883; professor of clinical otolaryngology at the Vanderbilt University School of Medicine; specialist certified by the American Board of Ophthalmology and the American Board of Otolaryngology; member and formerly vice president of the American Laryngological, Rhinological and Otological Society; member of the American Academy of Ophthalmology and Otolaryngology; past president of the Nashville Academy of Medicine; served in France during World War I; on the staffs of the Nashville General, Protestant, St. Thomas and Vanderbilt University hospitals; died January 3, aged 62, of coronary thrombosis.

Lloyd Bryan ⊕ San Francisco; University of California Medical Department, San Francisco, 1911; born in Fortuna, Calif., in 1884; associate clinical professor of radiology at his alma mater; specialist certified by the American Board of Radiology, Inc.; member of the American Roentgen Ray Society, American College of Radiology and the National Gastroenterological Society; member and past president of the Radiological Society of North America, Inc.; visiting roentgenologist at the Dante Hospital, Mount Zion Hospital, San Francisco Hospital and the Franklin Hospital, where he died December 21, aged 61, of lymphosarcoma

Frederick Whiting ⊕ New York; Long Island College Hospital, Brooklyn, 1885; born in Brooklyn, Feb 4, 1861; professor of clinical surgery (otology) emeritus at the Cornell University Medical College; consulting surgeon at New York Eye and Ear Infirmary and Mount Sinai Hospital, member of the American Otological Society; fellow of the American College of Surgeons and the New York Academy of Medicine; honorary member of the New York Otological Society; author of "Modern Mastoid Operation"; died March 12, aged 85, of cerebral hemorrhage.

Hans Edward Bedley, Meridean, Wis.; Barnes Medical College, St. Louis, 1908; died December 5, aged 83, of carcinoma of the stomach

John Nelson Blood ⊕ Redwood City, Calif.; College of Physicians and Surgeons of San Francisco, 1914; served during World War I and later in Siberia for a year with occupation forces; on the staffs of the Community Hospital of San Mateo County and the Mills Memorial Hospital in San Mateo, where he died December 25, aged 57, of cerebral hemorrhage.

Gregorio Catalano, Ransom, Pa.; Regia Università di Napoli Facoltà di Medicina e Chirurgia, Italy, 1905; member of the American Medical Association; medical director of the Ransom Mental Hospital; died in the West Side Hospital, Scranton, December 20, aged 67, of pneumonia.

William Clyde Comee ⊕ Green Bay, Wis.; College of Physicians and Surgeons of Chicago, School of Medicine of the University of Illinois, 1908; member of the American Academy of Ophthalmology and Otolaryngology; specialist certified by the American Board of Otolaryngology; died in the Bellin Memorial Hospital, December 8, aged 59, of influenza and lateral sclerosis.

George William Dahnke ⊕ Memphis, Tenn.; University of Tennessee College of Medicine, Memphis, 1925; instructor of dermatology and syphilology at his alma mater; died November 11, aged 48, of coronary occlusion.

Newcomb Lincoln Damon, New York; Boston University School of Medicine, 1883; died December 1, of arteriosclerotic heart disease.

Jacob A. Drooz, Albany, N. Y.; Albany Medical College, 1913; died December 13, aged 55, of cerebral thrombosis.

Clarence Payne Franklin ⊕ Philadelphia; University of Pennsylvania Department of Medicine, Philadelphia, 1893; fellow of the American College of Surgeons; for his services during World War I was decorated with the Italian War Cross and Order of the Crown of Italy; colonel, medical reserve corps, U. S. Army, not on active duty; died in the U. S. Naval Hospital December 11, aged 75.

George S. Gochenour, Moorefield, W. Va.; Baltimore Medical College, 1889; member of the American Medical Association; honorary life member of the West Virginia State Medical Association; past president of the Potomac Valley Medical Society; served as a member of the council, city health officer and vice president of the Hardy County Bank; died December 17, aged 88, of senility.

Charles W. Gooden, Edison, Neb.; Medical College of Indiana, Indianapolis, 1896; died December 22, aged 74, of burns received when his home caught fire.

George R. Gould, Warwick, N. Y.; Columbia University College of Physicians and Surgeons, New York, 1928; member of the American Medical Association; on the staff of St. Anthony's Hospital, where he died December 14, aged 41, of pulmonary embolism following laparotomy for ruptured gastric ulcer.

Charles Albert Jenkins, Keokuk, Iowa; Missouri Medical College, St. Louis, 1893; died December 5, aged 79, of cerebral hemorrhage.

Julian Lee Kendall, Mount Vernon, N. Y.; Manitoba Medical College, Winnipeg, Man., 1906; died December 19, aged 65, of coronary thrombosis.

David Hughes Lake, Syracuse, N. Y.; Jefferson Medical College of Philadelphia, 1885; member of the American Medical Association and affiliate member of the Medical Society of the State of Pennsylvania; past president of the Kingston (Pa.) Board of Health; died December 6, aged 81, of cancer of the stomach.

Charles E. Lauder, Viroqua, Wis.; University of Maryland School of Medicine, Baltimore, 1891; at one time secretary of the Vernon County Medical Society; a captain in the medical corps of the U. S. Army during World War I; for many years city health officer; died in Rochester, Minn., December 6, aged 79, of general peritonitis and ulcerative colitis.

Henry W. F. Law ⊕ Grand Forks, N. D.; Detroit College of Medicine, 1904; fellow of the American College of Surgeons; associated with the Grand Forks Clinic and was chief of staff of the Deaconess Hospital; died December 2, aged 74.

David Lorenzo Martin, Boston; Boston University School of Medicine, 1909; died December 6, aged 71, of cerebral hemorrhage.

George W. Mauzey, Findlay, Ill.; Louisville Medical College, 1892; Hospital College of Medicine, Louisville, Ky., 1893; a member of the "Fifty Year Club"; died January 2, aged 83, of an upper respiratory infection.

Melbourne George Millman, Alma, Mich.; Trinity Medical College, Toronto, Ont., Canada, 1888; died in the Michigan Masonic Home and Hospital January 5, aged 82, of carcinoma of the stomach.

Joseph Edward Norris ⊕ Baltimore; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1917; served during World War I; physician for the Baltimore and Ohio Railroad; on the staffs of the University Hospital and the Bon Secours Hospital, where he died December 7, aged 51, of injuries to the chest received in an automobile accident.

Adrian W. Rhodes, New York; Université de Lausanne Faculté de médecine, Switzerland, 1941; interned at the Metropolitan Hospital and the Bellevue Hospital, New York, serving a fellowship in pediatrics at the latter; resident in pediatrics at the Flower and Fifth Avenue Hospitals, New York; died December 8, aged 29, of chronic nephritis.

William Henry Sage, Chicago; Loyola University School of Medicine, Chicago, 1942; interned at St. Bernard's Hospital, where he served a residency; died December 10, aged 33, of chronic myocarditis and bronchial asthma.

Charles Reuben Scott ⊕ Twin Falls, Idaho; Northwestern University Medical School, Chicago, 1900; born in Belvidere, Ill., March 2, 1878; fellow of the American College of Surgeons; member of the House of Delegates of the American Medical Association in 1917, 1918, 1933 and 1937; past president of the Southside Medical Society and the Idaho State Medical Society; past chief of staff, Twin Falls County General Hospital; died January 8, aged 67, of hypertensive cardiovascular disease.

William David Sellers, Birmingham, Ala.; Atlanta College of Physicians and Surgeons, 1902; member of the American Medical Association; died in the South Highland Infirmary December 17, aged 65, of coronary occlusion and general arteriosclerosis.

Lawrence Shields ⊕ Xenia, Ohio; Medical College of Ohio, Cincinnati, 1895; at one time director of the American Hospital in Mexico City; past president of the Greene County Medical Society; served in France during World War I; died January 9, aged 73, of coronary thrombosis.

Sidney Edward Smith, Woodhaven, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1892; died December 30, aged 86, of cerebral hemorrhage.

Henry Loring Staples, Minneapolis; Medical School of Maine, Portland, 1886; died December 23, aged 86, of carcinoma of the stomach.

Willian Gale Stinchcomb, Bellefontaine, Ohio; Bellevue Hospital Medical College, New York, 1895; member of the American Medical Association; served during World War I; a member of the board of trustees of the Bellefontaine Public Library for twenty-five years, acting as treasurer most of that time; died December 19, aged 74, of pneumonia.

Dickran T. Tabibian, Jackson Heights, N. Y.; University of Vermont College of Medicine, Burlington, 1888; at one time practiced in Turkey and in 1895-1896 served at the capital as United States vice consul; died in the Physicians Hospital December 5, aged 87.

Edward Francis Timmins, Boston; Harvard Medical School, Boston, 1904; member of the American Medical Association; died December 11, aged 64.

Benjamin Franklin Turner ⊕ Memphis, Tenn.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1890; an Affiliate Fellow of the American Medical Association; emeritus professor of neurology at the University of Tennessee College of Medicine; formerly consulting neurologist at the John Gaston and St. Joseph's hospitals; formerly member of the city park commission; died January 8, aged 85, of myocardial failure and peripheral vascular embolus.

Martin Van Raalte ⊕ Chicago; Washington University School of Medicine, St. Louis, 1912; member of the Missouri State Medical Association; assistant roentgenologist at the Cook County Hospital; died December 5, aged 57, of coronary thrombosis.

Frank Walls, Chicago; Northwestern University Medical School, Chicago, 1891; professor emeritus of pediatrics at his alma mater; served on the staffs of the County, St. Luke's and Wesley Memorial hospitals; died in Fort Lauderdale, Fla., January 14, aged 76, of arteriosclerotic heart disease.

Sylvester Matthias Welsh, Waukesha, Wis.; State University of Iowa College of Medicine, Iowa City, 1929; began active duty as a captain in the medical corps, Army of the United States, on July 14, 1941; service terminated July 1, 1942; died in St. Joseph's Hospital, Milwaukee, November 26, aged 43, of cirrhosis of the liver.

Levi White, Worcester, Mass.; Bellevue Hospital Medical College, New York, 1872; member of the American Medical Association; died December 1, aged 96, of chronic myocardial degeneration.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 23, 1946.

The Government Bill for a Comprehensive National Health Service

The National Health Service bill, in which the government has given legislative form to its plans for a comprehensive health service, has at last been published. It provides a personal health service by doctors and dentists, whom the patient chooses, available at health centers at home or at the doctor's own office. Doctors may choose whether or not to join the service, and joining it will not debar them from receiving fees from those who do not wish to take advantage of the state scheme, which will be available to all, free and without qualification or limitation. All forms of general and specialist hospital care and treatment are included. Specialist opinions and treatment of all kinds will be available at hospitals, institutions, clinics, and in the patient's home. The minister of health will be responsible for the service, which will be administered by regional boards. The minister will take over voluntary and public hospitals and others if necessary, the teaching hospitals being given special treatment. Supplementary services will include midwifery, maternity and child welfare, home nursing, a priority dental service for children and expectant and nursing mothers, and domestic help when needed on health grounds. These services will be administered by local health authorities.

THE COST OF THE SCHEME

The cost of the scheme in the early years is estimated at $608,000,000 a year. The government will bear the full cost of the hospital and specialist services, estimated at $348,000,000, and of the family doctor, dentist and pharmaceutic services, estimated at $18,000,000, and will also pay $24,000,000, about half the cost of the services to be administered by the local health authorities. Hospital management committees will be set up for each large hospital or for groups of hospitals. The teaching hospitals will not come within this system but will have separate boards of governors.

THE POSITION OF DOCTORS

The service of family doctors, dentists and pharmacists is to be organized by local executive councils and based on health centers. The members of these councils will be nominated in equal numbers by the major local authorities and the minister and by the local doctors. Each doctor will have his own list of patients whom he has agreed to attend and can use the health centers as surgeries. The patient's freedom in the choice of doctor is not canceled, nor will there be a general direction of doctors. But there will be a certain control of their movement within the national service. Payment of doctors will be partly by salary and partly by capitation fee. The sale of practices which are wholly or partially within the National Health Service will be prohibited, and compensation will be paid to present practitioners for loss of selling values. In agreement with the doctors' representatives $264,000,000 has been fixed for the capital value involved. The distribution of compensation will be left to the profession, and the minister will accept any reasonable proposals within the total sum. Normally compensation will be paid on retirement or death. To meet the needs of unattractive areas which are short of doctors, salaries will be adjusted to induce them to enter these areas.

HOSPITAL AND SPECIALIST SERVICE

This covers hospital and consultant services of all kinds, including general and special services, maternity accommodation, tuberculosis sanatoriums, infectious disease units, provision for the chronically sick, mental hospitals and mental deficiency institutions, accommodation for convalescent treatment and medical rehabilitation, and all forms of specialist treatment, such as orthopedics, cancer, neurosurgery, plastic surgery, pediatrics, gynecology, ophthalmic services and ear, nose and throat treatment. All appliances required by patients, even dentures and spectacles, will be supplied.

THE TEACHING HOSPITALS

Special arrangements will be made for the teaching hospitals. Unlike the other hospitals, they will not be administered by regional boards set up under the bill. Each will have its separate board of governors, which will include members nominated by the university, the regional board for the area, the senior staff of the hospital itself and the previous governing bodies. The endowments of these hospitals will pass directly to the new boards of governors, who are assured that their purposes will still be observed as far as possible.

HEALTH CENTERS

A main feature of the general practitioner service is the development of health centers. These will afford means for general medical and dental services and also for many of the special services and sometimes for outpost clinics of the hospital and specialist services. They will provide doctors with equipped and staffed consulting rooms and also will be able to serve as bases for various activities in health education.

THE REACTION OF THE MEDICAL PROFESSION

Though attempts have obviously been made to meet some of the objections to the proposals of the government, the bill is unacceptable to the great majority of the medical profession on fundamental grounds. They entirely reject the principle which animates the socialist government—that the best scheme of medical treatment is to be obtained by state control of the profession. At a press conference Dr. Dain, chairman of the council of the British Medical Association, said that the present minister of health, Mr. Bevan, had taken an entirely different line from his predecessors. Members of the association had seen him only twice, and he would not negotiate with them. The association's view was that it was not in the public interest that doctors as a profession should become whole time state servants. The minister proposed to take the responsibility of telling doctors where they should practice and what form of practice they should undertake. Dr. Hill, secretary of the British Medical Association, said that the immediate reaction to the proposals was that they would lead sooner rather than later to doctors becoming whole time salaried servants of the state. That was a form of service that they believed to be contrary to the public interest. Meetings of members and nonmembers of the association would be called in every part of the country during the first fortnight of April. A special representative meeting of about 250 delegates would be held in London on May 1 and 2. The council of the British Medical Association is to submit for the information of the profession 56,000 copies of a report on the bill, which will be accompanied by a statement. It is pointed out that it is in the patient's interest that the doctor should be independent within his field. Inevitably there will be an urge on the part of the state to cut short all sickness and save funds and man power. The taking over by the state of all hospitals must cause a loss of local interest and discouragement of contributions.

The attitude of "the leading independent weekly medical journal," the *Lancet*, is summed up by the *Times* as "a cautious acceptance of the proposals." It admits that "to a profession of individualists the whole conception of government control is repugnant." To some it would seem to mean the triumph of bureaucracy over medicine, but there is another possibility, the triumph of medicine, in its own field, over bureaucracy. "Even if doctors became civil servants, the nature of civil service is changing before our eyes, for the enlarging machinery of the state is demanding the care of more and more technicians. In any medical service professional opinion adequately expressed is bound to command attention. We should ask ourselves whether, with all its risks, the service contemplated does not give us opportunities."

BRAZIL

(From Our Regular Correspondent)

Rio de Janeiro, March 22, 1946.

Incidence of the Rh Factor

Dr. Humberto C. Ferreira, Dr. Carlos S. Lacaz and Dr. Oswaldo Mallone of the Department of Microbiology and Immunology of the University of São Paulo have recently reported a study of the Rh factor in 260 white inhabitants of São Paulo using anti-Rh serum furnished by the Blood Transfusion Association of New York. Of these, 222 were Rh positive (85.4 per cent) and 38 were negative (14.6 per cent). This result does not differ significantly from the findings of Landsteiner, Wiener, Tisdall and Garland in white populations. In 249 persons of known blood type the results were as follows: in 139 persons of type O there were 116 Rh positive (83.5 per cent) and 23 negative (16.5 per cent); in 92 persons of type A there were 85 Rh positive (92.4 per cent) and 7 negative (7.6 per cent); in 15 persons of type B there were 13 Rh positive (86.7 per cent) and 2 negative (13.3 per cent) and in 3 persons of type AB all were Rh negative. There was a significant difference between the two sexes: in 106 males there were 95 Rh positive (89.6 per cent) and 11 negative (10.4 per cent) and in 154 females there were 131 Rh positive (85.1 per cent) and 23 negative (14.9 per cent).

Preparation of Antiscorpionic Serum

The frequency of scorpion bites in the region of Belo Horizonte, Minas Gerais, has emphasized the importance of antiscorpion serum. In 1928 production of the serum was initiated at the Minas Gerais branch of the Oswaldo Cruz Institute, under the direction of Dr. Octavio Magalhães, by the intravenous injection in bovine animals of increasing doses of scorpion venom (standardized in recently captured gray mice). After the foundation of the Minas Gerais State Institute of Chemistry and Biology Dr. A. Viana Martins was placed in charge of the preparation of antiscorpion serum. In a recent report Dr. A. Viana Martins of the Minas Gerais State Institute of Chemistry and Biology described improvements in the preparation of antiscorpion serum which include (1) the use of the horse as a source of blood serum, (2) the use of anavenom instead of venom as antigen, (3) subcutaneous instead of intravenous injection for immunizing inoculations and (4) the use of guinea pigs instead of gray mice for standardization. Bovine animals are not used for serum because of (*a*) the low yield of serum despite the possibility of hemorrhage due to small contractility of clot in bovine blood, (*b*) toxicity of bovine serum for certain laboratory animals and for man, particularly when used intravenously, (*c*) the possibility of anaphylactic shock in patients due to sensitization from bovine meat and milk as food and (*d*) the lesser docility of the animals. Fatal toxic accidents in test animals are prevented by the substitution of anavenom for venom as antigen. The anavenom is prepared as follows: Venom of Tityus serrulatus is obtained by grinding vesicles and is then diluted in isotonic solution of sodium chloride. One per cent of formaldehyde is added and the solution kept under toluene at 4 C. for forty days. This transformation into anavenom reduces the toxicity of the venom but does not change its antigenic power. Toluene, acting as a preservative, maintains the sterility of the anavenom solution and thus allows subcutaneous inoculation without the formation of large abscesses. The inconvenience of using recently captured gray mice is avoided by the substitution of guinea pigs for standardization tests. Work is in progress on the use of white mice for this purpose. With these changes in technic, potent antiscorpion serum is now produced more rapidly and more economically.

Brief Items

Gen. Florencio de Abreu, surgeon general of the Brazilian army medical corps, and Col. Isler Vieira, assistant surgeon of the medical corps, have left for the United States as guests of the American government, to study the organization of the U. S. Army Medical Corps.

Dr. J. Moura Moniz has been appointed professor of Bacteriology at the University of Rio de Janeiro to succeed Dr. Bruno A. Lobo, who died recently.

Dr. Delfino Pinheiro Cintra, professor of pediatrics at the University of São Paulo, reached the age limit and retired from active duty.

Dr. Raphael Paula Souza, professor of phthisiology at the University of São Paulo, has been appointed director of the Division of Tuberculosis of the National Department of Health.

Dr. H. Sampaio Correa has been appointed director of the Department of Health of the state of São Paulo.

Dr. Alberto Borgerth, surgeon of the Department of Hospitals of Rio de Janeiro, has been appointed director of the department.

Dr. Luciano Gualberto, professor of surgery at the University of São Paulo, left for the United States as guest of several American universities, where he will present surgical procedures for salpingectomy, hysterectomy and nephropexy.

Dr. Adelmo Machado, medical superintendent of the Hospital Couto Maia of Salvador, state of Bahia, died recently at the age of 49.

Personal

Dr. B. Paula Santos Jr., associate professor of ophthalmology at the University of São Paulo, has been appointed head of the Division of Trachoma of the São Paulo State Department of Health, succeeding Dr. Sylvio A. Toledo.

Marriages

William Crane Cantrell, Hamilton, Ala., to Lieut. Doris Melvin, Nurse Corps, U.S.N., of Birmingham in San Diego, February 28.

Horace A. Albertson, Richmond, Va., to Mrs. Marie Patterson Van Antwerp of Berkeley, Calif., at Fort Shafter, Honolulu, recently.

Frank Neville Buck Jr., Portsmouth, Va., to Miss Alice Marjorie Marshall of Louisia, December 21.

Merton Louis White to Miss Catherine Margaret Field, both of Washington, D. C., January 12.

John Clarence Taylor, Anderson, S. C., to Miss Maxine Carpenter in Opelousas, La., January 25.

Catherine Johnston, Bloomfield, Pa., to Mr. John B. Moore of Clincho, Va., February 9.

Russell L. Fankhouser of Pine Grove, W. Va., to Patricia Dodd of Savannah, Ga., March 4.

Robert Torrance Cale to Miss Ruth Varnon, both of Birmingham, Ala., January 25.

Hugh Browning Walker to Miss Annette Coffey, both of Kansas City, Mo., February 17.

Ralph Hogshead Jr., Albany, Ga., to Miss Ruth Cheney of Morgan, February 16.

Correspondence

HYPOGLYCEMIC FATIGUE

To the Editor:—Following the publication of the article Hypoglycemic Fatigue by Karlan and Cohn in the March 2 issue of The Journal, in which it was pointed out that no beneficial effects with atropine were obtained in cases of hypoglycemia, one of us had an opportunity to discuss the paper with Dr. Portis. Dr. Portis and Dr. Alexander had observed elevation of the blood sugar, normal glucose tolerance curves and relief from symptoms in other cases of hypoglycemia after the administration of atropine. As a result of our talk it is felt that two points in our paper should be reemphasized. In our cases atropine did not prevent the occurrence of hypoglycemic blood levels during the course of our intravenous glucose tolerance tests. It must be admitted that in 4 of our cases injected glucose was removed from the blood at a slower rate after atropine than without it. However, by carrying out our tolerance tests for three hours rather than two hours, as Portis did, we observed the same degree of hypoglycemia regardless of whether or not atropine was administered. In the second place, atropine did not remove or ameliorate the subjective symptoms in our patients. It is therefore felt that Portis was observing a different type of hypoglycemia than the one we encountered. It seems probable that there may be innumerable causes for so-called "idiopathic" hypoglycemia. We may have observed one type not influenced by atropine, while Portis and Alexander studied an entirely different etiologic group. The lack of correlation between the results in the two groups would seem to indicate this conclusion.

Clarence Cohn, M.D., Philadelphia.

BOMBING AND HEALTH

To the Editor:—Re: the editorial "Bombing and Health," page 638, Vol. 130, No. 10, dated March 9, 1946.

As chief of the Morale Division, U. S. Strategic Bombing Survey, under whose direction the Medical Sciences Branch of this survey operated, may I express the appreciation of each and every officer, enlisted man and civilian member of the U. S. S. B. S. whose combined efforts made the report possible. Your editorial is indeed a well earned compliment for them.

May I correct for the record two minor errors in the editorial:

1. Although Dr. Brandt was condemned to death on April 18, 1945 and the death warrant was signed by Hitler personally, Dr. Brandt was not executed. The conspiracy between Dr. Speer and Himmler versus Borman, Goebbels and Hitler resulted in Dr. Brandt's being repeatedly saved from execution and finally freed by Dr. Speer in May 1945 to join the so-called Doenitz government in Flensberg. It was at Flensberg that Dr. Brandt was arrested by the Allies on May 17, 1945 (U. S. S. B. S. interview 64, Prof. Dr. med. Karl Brandt, June 17-18, 1945). The last statement on page 339 of the Medical Report is misleading.

2. In Hamburg the heavy raids began the night of July 27, 1943 and four night raids followed during the next seven days. Thus in truth five raids killed approximately 50,000 people in those seven days of August and July 1943. (The German secret report available in the U. S. S. B. S. files in Washington tells what this means in terms of medicine and health not alone to the one city but to the nation.)

Again our sincere appreciation for your editorial.

Richard L. Meiling, M.D., Cleveland.

HODGKIN'S DISEASE AND GIANT FOLLICULAR LYMPHADENOPATHY

To the Editor:—Under the editorial comment entitled "Hodgkin's Disease and Giant Follicular Lymphadenopathy" in The Journal, March 16, the statement is made, referring to giant follicular lymphadenopathy, "it is curable by mild x-ray therapy." This is incorrect in the opinion of most students of the disease. Although Brill, Baehr and Rosenthal (The Journal, Feb. 28, 1925, p. 668) originally thought this condition benign, they have since reversed this opinion and Baehr, Klemperer and Rosenthal (*Am. J. Path.* **3**:550, 1927) look on the disease as a form of lymphosarcoma, which it resembles both clinically and, in later stages, pathologically. Although usually highly responsive to roentgen rays, the disease slowly progresses, has the course of a malignant neoplasm and in our experience is invariably fatal.

I bring this to your attention for the statement of curability, if transmitted to relatives of patients, will lead to unnecessary later distress for the patient, the relatives and the physician.

Ovid O. Meyer, M.D., Madison, Wis.

Bureau of Investigation

CEASE AND DESIST ORDERS

Abstracts of Certain Federal Trade Commission Releases

The work of the Federal Trade Commission in helping to protect the public against misrepresentation or fraud in the medical as well as other fields, has been greatly extended by the provisions of the Wheeler-Lea Amendment to the Federal Trade Commission Act. The Food, Drug and Cosmetic Act of 1938 increased the Food and Drug Administration's control of the advertising claims and statements made on the label of a medicine or on the carton or in the accompanying leaflet, whereas what might be termed collateral advertising, that which appears in circulars, newspapers and magazines and over the air, comes more actively under the purview of the Federal Trade Commission by virtue of the Wheeler-Lea Amendment.

The Journal has at various times commented on the activities of the Federal Trade Commission in this connection, even before the Wheeler-Lea Amendment gave it its added powers. In some cases the Commission may accept from the person or concern involved a stipulation that the objectionable practices or claims cited will be discontinued. In other cases the Commission issues what is known as a Cease and Desist Order, in which the individual, manufacturer or distributor cited is ordered to cease and desist from practices which have been declared objectionable. In some cases the claims cited have been discontinued by the firms several months (or even longer) before the issuance of the order. Abstracts of some of the orders issued in 1943, 1944 and 1945 follow in this form: name of product, name of distributor, date of issuance of complaint, date of issuance of Cease and Desist Order and terms of order.

Dr. Pierce's Purgative Pellets and Ward's Bile Salts Compound and Cascara Tablets.—Montgomery Ward & Company, Inc., Chicago; complaint issued Sept. 25, 1943; order issued April 9, 1945. Order directed respondent to discontinue any advertisements which failed to reveal that the products in question should not be used in the presence of abdominal pains, nausea, vomiting or other symptoms of appendicitis. It was provided, however, that such advertisements need contain only the statement, "Caution: Use only as directed," if the labeling instructions carried a warning to the same effect.

Indian Herbal Roots.—Gladys Goldberg, trading as Wakita Herb Company, New York; complaint issued Dec. 7, 1943; order issued Sept. 9, 1944. Order directed respondent to discontinue representations that the product is an effective treatment for nervousness, insomnia, or a sick, burning stomach; that it has any value in the treatment of poor appetite, back pains, headaches or a gassy stomach, beyond providing temporary relief when such symptoms and conditions are due to constipation; that these disorders are usually caused by constipation; that the preparation will restore energy or vitality, rid the body of accumulated poisons, and is not habit-forming. The order further directed Miss Goldberg to cease using the words "Indian" and "roots" as parts of the trade name or otherwise representing that the mixture is compounded from roots, or that its ingredients were used by the American Indians. The Commission found that the product is an irritant laxative and potentially dangerous when taken by one suffering from symptoms of appendicitis. The order required the respondent to discontinue any advertisement that did not reveal that the mixture should not be used in the presence of such symptoms. It was provided, however, that the advertising need contain only the statement, "Caution: Use only as directed," if the directions for use on the label or in the labeling carry a warning to the same effect.

Lady Ashton Foot Ease.—William H. Howe, Lowell, Mass.; complaint issued Dec. 3, 1943; order issued March 17, 1945. Order directed respondent to discontinue any advertisements which represented that his preparation would remove calluses or assist in their removal beyond temporarily softening the outer layers, that the product will relieve foot discomforts or tired, aching feet in excess of possibly affording temporary relief from such symptoms when used with foot bath and massage.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Workmen's Compensation Acts: County Tuberculosis Nurse Not Under Automatic Provisions Thereof.—The plaintiff claimed compensation for injuries resulting from an automobile accident which occurred during the course of her employment with the defendant, Christian County. From an award in her favor, which was affirmed by the circuit court, the county appealed to the Supreme Court of Illinois.

The plaintiff, a registered and certified public health nurse, was, for many years prior to Oct. 12, 1942, employed as county tuberculosis nurse by the board of directors of the tuberculosis sanatorium fund of the county of Christian. Her duties included interviewing patients, directing them to the clinic and giving them instructions, following up newly discovered cases at the clinic, making calls on patients at the sanatoriums and in their homes, interviewing doctors and hospital authorities, and investigating "borderline" cases to ascertain whether her own or an adjoining county was responsible for their hospitalization. She made a report each month to the sanatorium board and prepared an annual or semiannual report for use by the sanatorium board in making its report to the board of supervisors of the county. She was furnished an office in the county court house, where she wrote letters and often interviewed patients, but most of her work was done in the field. The automobile which she used for all this field work was purchased and maintained by the sanatorium and was placed completely at her disposal. On Oct. 12, 1942, while she was operating this automobile in the course of her work, the car collided with another vehicle and she received the injuries for which the award in question was granted. On appeal, the defendant county contended that the plaintiff was not entitled to compensation on the ground, among others, that she and the county of Christian were not operating under and bound by the provisions of the workmen's compensation act at the time and place of the occurrence of the accidental injuries. The plaintiff, on the other hand, contended that in the maintenance of the Christian County court house the county was engaged in an extrahazardous enterprise because it was subject to statutory and municipal ordinance regulations which automatically brought such enterprise within the extrahazardous provisions of the workmen's compensation acts; that therefore one department of her employer's business of providing treatment for tuberculous persons, namely the maintenance of the office or administrative department, was extrahazardous because conducted within the court house; that if one department of an enterprise or business is extrahazardous, then all of its departments are extrahazardous and all of its employees are entitled to the protection of the act; that this is true regardless of whether or not they are employed in the extrahazardous department or within the extrahazardous building at the time the injuries are received.

Section 3 of the workmen's compensation act provides that the act shall apply automatically and without election to all employers engaged in any enterprise in which statutory or municipal ordinance regulations are imposed for the protection and safeguarding of the employees or the public therein. The Supreme Court said that the regulations referred to in section 3 clearly meant regulations imposed on the enterprise of the employer. Continuing, the court said that an employer may conduct different and distinct businesses or enterprises, some of which automatically fall within the act and some of which do not, but the fact that it is engaged in a business or enterprise which is within the act creates no liability as to injuries sustained by an employee in another and different business or enterprise conducted by it which is not within the act. Assuming, said the court, that the court house is subject to such regulations, it is still essential that these regulations are imposed on the particular enterprise in which the county, as plaintiff's employer, is engaged and not merely some other and different enterprise in which the county is also engaged. The county of Christian, the court pointed out, is engaged in many more activities than just furnishing care and treatment to its tuberculous inhabitants; for one thing it maintains the court house building. The liability of the county arising because of the extrahazardous business of maintaining the court house, however, extends only to accidental injuries sustained by employees actually engaged in some act incidental thereto. Plaintiff's duties as tuberculosis nurse had no connection with and were not incidental to the business of maintaining the court house, said the court. The court then discussed the regulations relied on by the plaintiff and held that they did not bring the county, in its business of furnishing assistance to tuberculous inhabitants, within the extrahazardous provisions of the workmen's compensation act. The Supreme Court therefore concluded that the enterprise in which the plaintiff was employed at the time she sustained the accidental injuries for which she is claiming compensation was not subject to the workmen's compensation act and the judgment in favor of the plaintiff was accordingly reversed.—*Christian County v. Industrial Commission, 63 N. E. (2d) 515 (Ill., 1945).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in THE JOURNAL, April 6, page 969.

NATIONAL BOARD OF MEDICAL EXAMINERS

NATIONAL BOARD OF MEDICAL EXAMINERS: Parts I and II. Various Centers. May 6-8. Exec. Sec., Mr. E. S. Elwood, 225 S. Fifteenth St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

AMERICAN BOARD OF ANESTHESIOLOGY: *Oral.* New York, Oct. 9-14. Sec., Dr. Paul M. Wood, 745 Fifth Ave., New York 22.

AMERICAN BOARD OF INTERNAL MEDICINE: *Oral.* San Francisco, June 27-29. Final date for filing application is April 15. *Written.* Final date for filing application is July 1. Asst. Sec., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

AMERICAN BOARD OF OBSTETRICS AND GYNECOLOGY: *Oral.* Chicago, May 6-11. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

AMERICAN BOARD OF OTOLARYNGOLOGY: Chicago, May 22-25. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City, Ia.

AMERICAN BOARD OF PATHOLOGY: San Francisco, July 1-2. Applications should be submitted at once. Sec., Dr. F. W. Hartman, Henry Ford Hospital, Detroit 2.

AMERICAN BOARD OF PEDIATRICS: *Oral.* Cleveland, April 27-28 and San Francisco, July 1-5. Sec., Dr. Lee F. Hill, 3309 Forest Ave., Des Moines, Ia.

AMERICAN BOARD OF RADIOLOGY: Chicago, Nov. 27 to Dec. 1. Final date for filing application is Sept. 1. Sec., Dr. B. R. Kirklin, Mayo Clinic, Rochester, Minn.

AMERICAN BOARD OF SURGERY: *Written. Part I.* Various centers, October. Final date for filing application is July 1. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia 2.

AMERICAN BOARD OF UROLOGY: *Oral.* Chicago, February 1947. Final date for filing application is Nov. 15. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis 4.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Journal of Orthopsychiatry, New York

16:1-190 (Jan.) 1946. **Partial Index**

Study in Adolescent Imagery. B. Karpman.—p. 1.
Food Habits of Adolescents in Relation to Family, Training and Present Adjustment. Elisabeth F. Hellersberg.—p. 34.
Psychologic Effects of War on Family and Its Individual Members. Ethel Dukes.—p. 64.
Use of Boarding Homes in Conjunction with Private Psychiatric Residential School. Dorothy G. Wright and E. Mary Leitch.—p. 74.
Psychiatric Program in Agency Serving Youth. D. Beres, Virginia Schaeffer and Julia Goldman.—p. 84.
Psychosomatic Component in Problem Behavior. P. Deutschberger. —p. 147.
Dynamic Interpretation and Treatment of Acute Stuttering in Young Child. Marjorie Harle.—p. 156.
Behavior Problems of Eating. L. S. Selling.—p. 163.
Truancy Syndrome. J. Andriola.—p. 174.

American Journal of Public Health, New York

36:1-100 (Jan.) 1946

Blood and Blood Derivatives—New Public Health Field. C. A. Janeway.—p. 1.
Typhoid Vaccine Studies: X. Suitability of Vi Antigen as Auxiliary Immunogen for Typhoid Vaccine: Progress Report. G. F. Luippold. —p. 15.
Age and Sex Variations in Prevalence and Onset of Diabetes Mellitus. M. Spiegelman and H. H. Marks.—p. 26.
*Outbreak of Typhoid Fever with Orange Juice as Vehicle, Illustrating Value of Immunization. T. G. Duncan, J. A. Doull, E. R. Miller and Hulda Bancroft.—p. 34.
Epidemiologic Studies on Infectious Hepatitis. W. P. Havens Jr.—p. 37.
Proposed Report on Educational Qualifications of Nutritionists in Health Agencies. W. P. Shepard.—p. 45.
Occurrence of Shigella Types in Military Population of Southeastern United States—1943 and 1944. C. T. Nelson, A. F. Borg, J. Spizizen and Marguerite J. Barnes.—p. 51.
Incidence of Certain Biologic Characteristics Among "Food Poisoning" Staphylococci. H. A. Feldman.—p. 55.
New Statement of School Health Policies. C. C. Wilson.—p. 58.

Typhoid Caused by Orange Juice: Value of Immunization.—Duncan and his associates report a small localized epidemic of typhoid, which occurred in a residential hotel for business women. A woman preparing the orange juice had Eberthella typhosa in her stool, and the Widal test for this woman showed for the H antigen plus-minus in a dilution of 1 : 80 and for the O antigen positive in a dilution of 1 : 160. All but 1 of the patients with typhoid were known to have consumed orange juice. As supporting evidence, orange juice was inoculated with typhoid bacilli isolated from the carrier and incubated at room temperature. Viable bacilli were recovered up to six days after inoculation. It was found that only 1 case of typhoid occurred among the 211 persons who had been immunized against typhoid, while there were 17 among the 140 who had not been immunized.

Journal of Experimental Medicine, New York

83:1-88 (Jan.) 1946. **Partial Index**

Etiology of Colorado Tick Fever. L. Florio, Mabel O. Stewart and E. R. Mugrage.—p. 1.
Preparation of Highly Purified PR8 Influenza Virus from Infected Mouse Lungs. C. A. Knight.—p. 11.
Studies on Pneumonia Virus of Mice: I. Precision of Measurements in Vivo of the Virus and Antibodies Against It. F. L. Horsfall Jr. and E. C. Curnen.—p. 25.
Studies on Nature of Resistance to Gram-Negative Bacilli to Penicillin: Antagonistic and Enhancing Effects of Amino Acids. G. Shwartzman. —p. 65.

Journal of Immunology, Baltimore

51:375-436 (Dec.) 1945

Serologic Studies in Typhus Vaccinated Individuals: II. Effect of Non-Typhus Fevers on Weil-Felix and Complement Fixing Antibodies. C. J. Zarafonetis.—p. 375.
Action of Synthetic Detergents on Certain Strains of Bacteriophage and Virus. M. Klein, S. S. Kalter and S. Mudd.—p. 389.
Studies on Mechanism of Host Resistance in Experimental Leptospirosis Icterohemorrhagica. A. B. Stavitsky.—p. 397.
Factors Influencing Leukoagglutination by Antileukocytic Sera. B. Steinberg and Ruth A. Martin.—p. 421.

Journal Industrial Hygiene & Toxicology, Baltimore

27:275-298 (Dec.) 1945

Silicious Exposures in Fire Brick Industry: I. Engineering Study. W. W. Stalker.—p. 275.
Id.: II. Roentgenologic Study. W. L. Ritter and P. G. Bovard.—p. 283.
Control of Lead Poisoning Hazard in Can Manufacturing: I. Body-making Machine (Side Seamer). M. Eisenbud and J. W. McEwan. —p. 284.
Electric Arc Welding Ventilation and Its Relation to Oxygen Deficiency. F. J. Viles Jr. and L. Silverman.—p. 289.
Filter Paper Spot Sampling of Air Borne Solids. B. D. Tebbens. —p. 292.

Journal Pharmacology & Exper. Therap., Baltimore

85:289-378 (Dec.) 1945

Excretion of Sodium Trichloracetate. Z. V. Paykoç and Joan F. Powell. —p. 289.
Side-Effects of Antihemorrhagic Quinones: II. Antipressor Action in Chronic Hypertension in Man. N. Rosenthal and S. Shapiro.—p. 294.
Absorption of Cinchona Alkaloids in Chick and Its Relationship to Antimalarial Activity. P. B. Marshall.—p. 299.
Goitrogenic Agents and Thyroidal Iodine: Their Pharmacodynamic Interplay on Thyroid Function. W. T. Salter, R. E. Cortell and E. A. McKay.—p. 310.
Contribution to Pharmacology of 5-Nitro-2-Furaldehyde Semicarbazone. J. C. Krantz Jr. and W. E. Evans Jr.—p. 324.
Reaction of Tissue Aldehydes with Certain Drugs. K. A. Osler and Jean G. Oster.—p. 332.
Induction of Nutritional Deficiency by Oral Administration of Streptomycin. Gladys A. Emerson and Dorothy G. Smith.—p. 336.
Choleretic Action of Dehydrocholic Acid (Decholin) and Deoxycholic Acid (Degalol) in Chronic Biliary Fistula Dogs. E. M. Boyd, W. F. Perry and W. C. Stewart.—p. 343.
Note on Bell and Krantz Modification of Knudson-Dresbach Chemical Assay of Digitalis. B. J. Vos Jr. and L. H. Welsh.—p. 346.
Response of Hamster to Drugs. K. K. Chen, C. E Powell and N. Maze. —p. 348.
Studies on Factors Influencing Toxicity of Nicotine: Effects of Water and Food Deprivation; Disturbed Liver Function and Rate of Administration. H. B. Haag, P. S. Larson and J. K. Finnegan.—p. 356.
Determination of DDT (2,2-Bis [p-Chlorophenyl] 1, 1, 1-Trichloroethane) and Its Metabolite in Biologic Materials by Use of Schechter-Haller Method. Ruth R. Ofner and H. O. Calvery.—p. 363.

Rocky Mountain Medical Journal, Denver

43:1-80 (Jan.) 1946

Head Injuries. W. R. Lipscomb.—p. 18.
Infection in Clean Surgical Wounds. E. W. Barber.—p. 23.
Incidence of Rheumatic Heart Disease in Rocky Mountain Region. J. F. Cannon.—p. 25.
*Topical Use of Combination of Penicillin and Sulfadiazine in Water Soluble Base for Treatment of Sinusitis. A. S. Pugmire and D. Eberle. —p. 26.
Foreign Body in Uterus. L. W. Mason.—p. 28.

Penicillin and Sulfadiazine in Water Soluble Base for Sinusitis.—Pugmire and Eberle in treating suppurative sinusitis used a mixture which contained 4 per cent of sulfadiazine and 20,000 units of penicillin in 1 Gm. of moderately thin water soluble ointment base. It is easily injected through a 15 gage trocar used for ordinary antral lavage. Following ordinary lavage with isotonic solution of sodium chloride the mixture is instilled into the sinus and allowed to remain until the next irrigation, which is usually forty-eight to seventy-two hours later. This subsequent lavage showed a remarkable reduction in the amount of pus present, with little or none of the mixture remaining. It was necessary to repeat this procedure two or three times to obtain a pus free or 1 plus pus washing. In most cases the patient was clinically symptom free with only a slight clear postnasal drip present after a period of three to four weeks. Two or three subsequent lavages were done after the first clear washing was obtained to make certain that residual pus was not present. Five cases were selected at random, regardless of past history and treatment. All were pus free after one to five or six lavages, and there has been no recurrence.

Southern Medical Journal, Birmingham, Ala.

39:1-96 (Jan.) 1946. Partial Index

Trend of Medicine Toward Socialization. E. V. Mastin.—p. 1.
Reconversion of Doctor from War to Peace. W. H. Graham.—p. 15.
Types of Circulatory Failure. T. R. Harrison.—p. 26.
Effect of Folic Acid on Sprue. T. D. Spies, G. G. Lopez, J. A. Menendez, Virginia Minnich and Mary B. Koch.—p. 30.
Disturbances in Lipid Metabolism in Children. A. E. Hansen.—p. 32.
Newer Methods of Hemostasis in Neurosurgery. C. Pilcher.—p. 39.
Modern Treatment of Mucocele of Frontal and Ethmoidal Sinuses: Some Comments on Treatment of Lesions Pertaining to Orbit and Adjacent Nasal Sinuses. H. M. Goodyear.—p. 42.
Ectopic Pregnancy. H. H. Ware Jr. and W. C. Winn.—p. 44.
Principles of Penicillin Therapy. F. T. Billings.—p. 50.
*Treatment of Streptococcus Viridans Endocarditis with Penicillin. H. L. Hirsh and H. F. Dowling.—p. 55.
Does Fractional Daily Urine Examination on Diabetic Patient Furnish Ideal Means of Control? H. J. John.—p. 60.
Observations on Treatment of Diabetes Mellitus Complicated by Pulmonary Tuberculosis. J. P. Melvin Jr. and H. T. Englehardt.—p. 64.
Ten Years' Experience with Operation for Cure of Certain Types of Sexual Impotence. O. S. Lowsley and J. T. Cangelosi.—p. 67.

Penicillin in Streptococcus Viridans Endocarditis.—Hirsh and Dowling employed penicillin in the treatment of 10 patients who had typical symptoms of bacterial endocarditis. The authors administered penicillin continuously by vein to the first patients but soon found that this method was not practical. To the patients treated subsequently, penicillin was administered for a few days by the continuous intramuscular method or by intramuscular injections at two hour intervals. When the continuous intramuscular or intravenous method of administration was employed, the dose was 200,000 units for each twenty-four hour period. Most of the patients who were given intermittent injections received 25,000 to 30,000 units every two hours until the blood cultures had become sterile and the fever had subsided. Thereafter they were given 20,000 units every two hours until the eight week treatment period had been completed. One patient died after twelve, another after twenty-one and the third after nineteen days of penicillin treatment. The fourth patient died six months after the completion of penicillin therapy. Six of the 10 patients treated with penicillin have remained free from all evidences of infection for from four to twelve months. Age, sex, color, valvular involvement and duration of infection were not factors in the ultimate prognosis of these patients. The presence of a serious complication before treatment did not necessarily preclude recovery. It is concluded that patients with endocarditis should be treated with penicillin for a period of eight weeks. By this method relapses are apparently avoided.

Surgery, Gynecology and Obstetrics, Chicago

82:1-112 (Jan.) 1946

Traumatic Aneurysm: The Matas Operation—Fifty-Seven Years After
D. C. Elkin.—p. 1.
War Injuries of Chest. E. B. Kay and R. H. Meade.—p. 13
*Intravenous Gelatin for Nutritional Purposes: Clinical and Experimental Studies A. Brunschwig, S. Nichols and R. Bigelow.—p. 25.
Indications for Roentgen Therapy of Bladder Carcinomas: Recognition of Suitable Cases. F. Buschke and S. T. Cantril.—p. 29.
*Reflex Sympathetic Dystrophy. J. A. Evans.—p. 36.
Single Stage Operative Method of Management of Chronically Infected, Ununited Fractures. F. G. Hicks.—p. 44.
Saphenous Venous Tributaries and Related Structures in Relation to
Technic of High Ligation, Based Chiefly on a Study of 550 Anatomic
Dissections. E. H. Daseler, B. J. Anson, A. F. Reimann and L E Beaton.—p. 53.
Thoracoabdominal Wounds: Review of 270 Cases. D. B. Fox.—p. 64.
*Decortication in Acute Empyema Thoracis. P. W. Sanger.—p. 71
Osteogenic Sarcoma: II. Roentgenographic Interpretation of Growth Patterns in Bone Sarcoma. I. MacDonald.—p. 81.
Acquired Esophagotracheobronchial Fistula. O. T. Clagett, J. H. Payne and H. J. Moersch —p. 87.
Gunshot Fractures of Femoral Shaft. E. A. Brav and W. T. Fitts Jr. —p. 91.
Diagnosis of Acute Flexor Tendon Tenosynovitis. W. R. Moses.—p. 101

Intravenous Gelatin for Nutrition.—Brunschwig and his associates describe studies on gelatin as a parenteral nitrogenous nutriment. The gelatin employed was prepared from pigskin, autoclaved several times and made up into an 8 per cent solution in isotonic solution of sodium chloride. The aim was to determine whether intravenous gelatin is utilized for synthesis of the organism's own proteins (plasma proteins in particular). Experiments on dogs revealed that gelatin administered intravenously is at least partially utilized for regeneration of plasma proteins. Clinical experience indicates that intravenous gelatin constitutes one method by which nitrogenous substances for nutritional purposes may be administered. Nitrogen in such form is anabolically utilized.

Reflex Sympathetic Dystrophy.—According to Evans, reflex sympathetic dystrophy is a most disabling, often extremely painful, malady following minor sprains, ordinary fractures or trauma to blood vessels or nerves. The syndrome is characterized only at times by the excruciating, burning pain that has given it the term "causalgia," hence a misnomer. Pain may be moderate, mild or absent. The true diagnostic features are disorders initiated by perversions of reflex sympathetic stimulation, such as rubor or pallor, sweating, edema, atrophy of the skin and spotty or even cystic atrophy of bone. In the past year the author has gathered mainly from the orthopedic service, from the neurosurgical service and from the medical and surgical services of the Lahey Clinic 32 cases of reflex sympathetic dystrophy. The causal trauma or diseases included sprain, fracture, thrombophlebitis, bruise, amputation and anterior poliomyelitis. Rubor was present in 15 and pallor in 9 cases. Swelling or sweating or both was present in over half of the cases. Atrophy of the skin was noted in 4 and of muscle in 7 patients. The typical bone atrophy of sympathetic origin is mottled, in advanced cases even cystic (Sudeck's syndrome). Diagnosis depends largely on the demonstration of relief by sympathetic procaine block. In 9 patients treated by sympathetic procaine block alone 7 had relief of pain varying from three weeks to permanent. The other 2 received relief of pain only for the duration of the procaine effect. Thirteen patients of the 32 had sympathectomy performed, with relief of pain ranging from 75 to 100 per cent in 9. The 2 patients without pain but with other sympathetic phenomena have not submitted to either block or sympathectomy.

Decortication in Acute Empyema Thoracis.—According to Sanger, the radical management of empyema thoracis in the acute and subacute phases is an attempt to eliminate chronic empyema. On the basis of war experience the author has formed the following opinions: 1. Closed or open drainage (thoracostomy) is the procedure of choice in small and moderate sized, unilocular, post-traumatic or postpneumonic empyema 2. Thoracotomy with evacuation of the pleura and decortication of the lung is the procedure of choice in multilocular empyema and in total empyema with collapse of the upper lobe. In this group fall both post-traumatic and postpneumonic infections, including those which develop in large clotted hemothoraces. The technic of pulmonary decortication used by the author was essentially the same as that described by Burford and Samson

Texas State Journal of Medicine, Fort Worth

41:443-498 (Jan.) 1946

Evaluation of Palpitation. T. R. Harrison.—p. 452.
Human Encephalitis Due to Western Equine Encephalomyelitis Virus
S. E. Sulkin.—p 455.
Lymphosarcoma, with Primary Manifestations in Gastrointestinal Tract
Report of 7 Cases Studied Roentgenologically. R. D. Moreton.—p. 458
Physiologic Approach to Problem of Oophorectomy. W. F Mengert —p. 465.
Parathyroid Adenoma of Anterior Mediastinum. C. C McDonald —p. 468.
Acute Meningococcemia Without Meningitis Report of Case. J H Park Jr. and J. P. Chapel.—p. 471.
Vital Statistics in Public Health. A. C Love —p. 473.
Governing a Health Unit: Organization, Activities and Plans for Future Housing. E. Langford.—p. 475.

West Virginia Medical Journal, Charleston

42:1-28 (Jan.) 1946

Management of Thrombophlebitis C. D. Hershey and R B Bailey —p. 1.
Note on Occurrence of Silicosis in Bituminous Coal Miners M J Small.—p 6.
Pitfalls in Localizing Intestinal Obstruction with Scout Film: Ca-
Report. G. Vash, K. J. Myers and H. C. Myers —p 7.
Occupational Therapy and the Aging Person L J Haas —p. 10

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

Annals of Tropical Medicine, Liverpool

39:137-236 (Dec.) 1945

Studies on Synthetic Antimalarial Drugs: I. Biologic Methods. F. H. S. Curd, D. G. Davey and F. L. Rose.—p. 139.
Id.: II. General Chemical Considerations. F. H. S. Curd, D. G. Davey and F. L. Rose.—p. 157.
Id.: III. Preliminary Investigation of Therapeutic Action of 3349 on Acute Attacks of Benign Tertian Malaria. A. R. D. Adams and G. Sanderson.—p. 165.
Id.: IV. Preliminary Investigation of Therapeutic Action of 3349 on Acute Attacks of Malignant Tertian Malaria. A. R. D. Adams and G. Sanderson.—p. 169.
Id.: V. Further Investigation of Therapeutic Action of 3349 on Benign Tertian and on Malignant Tertian Malaria Infections. A. R. D. Adams and G. Sanderson.—p. 173.
Id.: VI. Comparison of Therapeutic Actions of 3349 and of Mepacrine (Quinacrine) Hydrochloride on Acute Attacks of Benign Tertian Malaria. A. R. D. Adams and G. Sanderson.—p. 180.
Id.: VII. Turbidimetric Determination of 2-p-Chlorophenylguanidino-4-Beta-Diethylaminoethylamino-6-Methylpyrimidine (3349). A. Spinks.—p. 182.
Id.: VIII. Colorimetric Determination of 2-p-Chlorophenylguanidino-4-Beta-Diethylaminoethylamino-6-Methylpyrimidine (3349). A. Spinks and Mary M. Tottey.—p. 190.
Id.: IX. Excretion of 2-p-Chlorophenylguanidino-4-Beta-Diethylaminoethylamino-6-Methylpyrimidine (3349) in Human Urine. A. Spinks and Mary M. Tottey.—p. 197.
Id.: X. Some Biguanide Derivatives as New Types of Antimalarial Substances with Both Therapeutic and Causal Prophylactic Activity. F. H. S. Curd, D. G. Davey and F. L. Rose.—p. 208.
Id.: XI. Investigation of Therapeutic Action of 4430 on Benign and Malignant Tertian Malaria. A. R. D. Adams, R. H. Townshend and J. D. King.—p. 217.
Id. XII. Determination of N_1-p-Chlorophenyl-N_5-Methyl-N_5-Isopropylbiguanide (4430) and N_1-p-Chlorophenyl-N_5-Isopropylbiguanide (Paludrine): Preliminary Report. A. Spinks and Mary M. Tottey.—p. 220.
*Id. XIII. Results of Preliminary Investigation of Therapeutic Action of 4888 (Paludrine) on Acute Attacks of Benign Tertian Malaria. A. R. D. Adams, B. G. Maegraith, J. D. King, R. H. Townshend, T. H. Davey and R. E. Havard.—p. 225.
Id.: XIV. Results of Preliminary Investigation of Therapeutic Action of 4888 (Paludrine) on Acute Attacks of Malignant Tertian Malaria. B. G. Maegraith, A. R. D. Adams, J. D. King, R. H. Townshend, T. H. Davey and R. E. Havard.—p 232

Therapeutic Action of Paludrine on Acute Benign Tertian Malaria.—In 147 cases of acute benign tertian malaria doses varying from 10 mg. to 700 mg. every twelve hours for from fourteen to twenty-eight days were administered. Clinical cure was obtained in all cases. Serious side effects were not observed. The plasma concentrations and urinary output of the drug were determined in groups of patients and volunteers taking doses of 50 mg. and 500 mg. every twelve hours for fourteen days.

Edinburgh Medical Journal

52:433-484 (Dec.) 1945

Treatment of Duodenal Ulcer. W. Q. Wood.—p. 433.
Clinical Review of Cancer of Breast and Antecedent Chronic Conditions. R. F. Young.—p. 451.
Postoperative Pulmonary Complications. C. Kelman Robertson.—p. 460.
*Use of Penicillin in Acute Infections of Hand. J. F. Curr.—p. 469.

Penicillin in Acute Infections of Hand.—Curr describes an investigation to determine the efficiency of penicillin in acute infections of the hand. Penicillin crude filtrate of a concentration of 80 units per cubic centimeter was used in 60 cases. At the time of operation, and daily thereafter for a week, it was introduced into the wounds either in lightly packed dressings or through fine rubber tubes, also acting as drains. The effects were uniformly undesirable, as the wounds and adjacent healthy skin became sodden and tender and a heavy growth of coliform organisms appeared. The results were not as good as in the control series, and penicillin crude filtrate was condemned in the treatment of hand infections requiring incision. Penicillin lanette wax cream of a concentration of 500 to 1,000 units per gram of cream was used in 109 cases, being introduced into the operation wounds daily for a week, when necessary along a blunt wide bored needle. With few exceptions the results were not better than control methods. Most incisions of the hand were unsuitable for the introduction of a powder. Administration of penicillin by continuous intramuscular drip in a daily dose of 100,000 units for five days was utilized in 39 cases of acute tenosynovitis, with encouraging results. Penicillin mixed with beeswax or peanut oil was injected intramuscularly twice daily. The results were not encouraging in 3 cases.

Journal of Pathology and Bacteriology, Edinburgh

57:397-500 (Oct.) 1945

Two Cases of Mixed Malignant Tumor of Breast. A. D. Telford Govan.—p. 397.
Malignant Tubular Adenoma in Horseshoe Kidney: Its Significance with Regard to General Cancer Pathology. P. Ladewig and S. Eser.—p. 405.
Microscopic Study of Evolution of Mouse Mammary Cancer: Effect of Milk Factor and Comparison with Human Disease. Georgiana M. Bonser.—p. 413.
*Use of Splenectomized Rabbit for Assay of Liver Extracts, with Observations on Chemical Nature of Anti-Pernicious Anemia Factor. W. Jacobson and S. M. Williams.—p. 423.
Arrhenoblastoma: Report of Case with Unusual Features. B. Jolles and H. H. Gleave.—p. 435.
Histogenesis of Experimental Pneumonia in Mice. L. Hoyle and J. W Orr.—p. 441.
Features in Congo Red Molecule Associated with Inactivation of Complement. J. Gordon and N. Walker.—p. 451.
Effect of Agar Depth in Plate Method for Assay of Penicillin. W. Hayes.—p. 457.
Experimental Approach to Problem of Trauma and Tumors. B. D. Pullinger.—p. 467.

Anti-Pernicious Anemia Factor.—Jacobson and Williams tested substances which were likely to be found in liver extracts. The following substances injected intravenously into splenectomized rabbits failed to produce reticulocyte response: ascorbic acid, vitamin B_1, calcium pantothenate, pyridoxine and nicotinic acid amide, a biotin preparation the exact concentration of which was unknown and lactoflavin. Tests with amino acids and peptone likewise gave a negative reticulocyte response. Purines were tested because it was found that pterines, which are chemically related compounds, produced a reticulocyte response. None of the purines gave a positive reticulocyte response, and iron likewise failed to give a reticulocyte response. Thus it was considered reasonable to rule out all these impurities as the cause of the reticulocyte response to liver extracts. Clinically inactive liver extracts failed to produce a response. Injections of extracts of crypts and villi of the small intestine and of an argentaffine cell tumor (carcinoid), synthetic xanthopterin, leukopterin and the pigment derived from fused uric acid gave a reticulocyte response in the splenectomized rabbit. These observations suggest that pterines play a part in erythropoiesis. The presence of pterines in preparations of liver and intestine and the activity of xanthopterin and leukopterin in splenectomized rabbits does not mean that pterines are identical with the anti-pernicious anemia factor, but it strongly suggests that they are a constituent of the active principle.

Lancet, London

2:41-76 (Jan. 12) 1946

*Subacute Necrosis of Liver Without Icterus. J. S. Lawrence.—p. 41.
Effect of Some Antibiotics on Pathogenic Fungi. A. G. Sanders.—p. 44.
*Mycophenolic Acid: Antibiotic from Penicillium Brevi Compactum Dierckx. H. W. Florey, M. A. Jennings, K. Gilliver and A. G Sanders.—p. 46.
Surgery in Malaria. E. Parry.—p. 49.
*Hepatitis After Penicillin Injections. L. Howells and J. D. O. Kerr—p. 51.
Fetal Dysplasia of Leg: New Operative Approach. H. Eckstein and F. M. P. Eckstein.—p. 52.
Penicillin in Gonorrhea. S. M. Laird and A. B. Fieldsend.—p. 53.

Subacute Necrosis of Liver Without Icterus.—Lawrence describes a case of subacute necrosis of the liver in which jaundice was absent. The treatment should be as for subacute necrosis with jaundice. The diet should be high in carbohydrate, and during a relapse the patient should rest in bed and receive additional dextrose and insulin. A hypochromic anemia should be treated with iron. For the edema vitamin B_1 is worth a trial, particularly if polyneuritis is also present; transfusions of blood or plasma cause a temporary improvement and serve a dual purpose, for depletion of plasma protein renders the liver more susceptible to damage. Repeated paracentesis may be necessary for the ascites. The edema is due to a reduction of the serum albumin, resulting apparently from inadequate formation of these constituents in the liver.

Mycophenolic Acid, an Antibiotic from Penicillium Brevi Compactum Dierckx.—Florey and his associates incubated overnight at 37 C serial dilutions of sodium mycophenolate in 5 cc of broth inoculated with one drop of culture of various bacteria The results show that the action of mycophenolic acid is stronger against the gram-positive than against the gram-negative organisms, and that the inhibitory effect, as read after sixteen to eighteen hours' incubation, is strikingly affected by the size of inoculum used Thus the titer for complete inhibition of the staphylococcus was sixty-four times greater when the inoculum was a thousand times less After experiments on the toxicity, absorption and excretion of mycophenolic acid experiments were undertaken to find out whether it inhibited fungi as well as bacteria The fungi chosen were those which could readily be grown in culture Fourfold dilution series of mycophenolic acid, from 1 5,000 upward, were set up in liquid Sabouraud's medium and inoculated with the fungi The following species were inhibited Stereum purpureum, Verticillium dahliae, Claviceps purpurea, Phytophthora erythroseptica, Rhizoctonia crocorum and Rhizoctonia solani

Hepatitis After Penicillin Injections.—Howells and Kerr treated in military practice 47 patients with hepatitis who had received penicillin injections Of the 47 patients, 36 had received penicillin treatment at the same venereal disease treatment center The average period between injections and onset of icterus was 97 days, with a lower limit of 62 days and a higher limit of 157 days In view of the high proportion of patients who had received their penicillin treatment at the same center, the authors visited it and discussed the problem During the period concerned 1,600 cases were treated with penicillin injections at this center As a routine each syringe is used for about 5 patients Needles are cleaned after each injection It is thought that penicillin is not the direct cause of the hepatitis, which may be due to some icterogenic agent, e g a virus, transmitted by faulty injection technic The fact that so many cases had been treated at the same center, together with the length of the latent period, favors this theory, and it seems likely that the cause is analogous to that responsible for late jaundice after antisyphilitic arsenical therapy

Nordisk Medicin, Gothenburg

25:679-746 (March 29) 1945 Partial Index

Chronic Polyarthritis Symptomatology and Treatment E Snorrason —p 683

Norsk Magasin for Lægevidenskapen

*Traumatic Late Hemorrhages in Brain and Meninges and Their Significance in Accident Insurance, Addendum Significance of Traumas in Development of Vascular Diseases F Harbitz —p 715
Agranulocytosis After Sulfathiazole K Aas —p 724

Hygiea

*Pernicious Anemia and Cancer of Stomach Study of 18 Cases of Cancer of Stomach in 233 Patients with Pernicious Anemia from Uppsala Province J Waldenstrom —p 729
Is Cecal Fistula Always Without Danger? R Brandberg —p 735

Traumatic Late Hemorrhages in Brain and Meninges.—From his study of 27 cases of brain hemorrhage Harbitz concludes that while the possibility of traumatic late hemorrhages cannot be excluded such cases are rare Traumatic and spontaneous subarachnoid hemorrhages (including those due to aneurysms) are frequent and often recurrent, i e late hemorrhages Arteriosclerosis and syphilitic arteritis in the brain, which may often be latent become manifest after trauma of the head and are rapidly aggravated

Pernicious Anemia and Cancer of Stomach—Only four cancers of the stomach in 18 patients with pernicious anemia were operable In 2 instances cancer and pernicious anemia were discovered at the same time, in 4 pernicious anemia occurred after gastric resection In 11 cases the cancer developed more than three years after the pernicious anemia Few patients, according to Waldenstrom, could expect to have greater prospects for early diagnosis of cancer of the stomach than those under constant control because of their pernicious anemia Since the majority of treated cases of pernicious anemia are without gastric disturbance in spite of their achylia, the occurrence of such symptoms should be a significant warning A tendency to low serum iron values and low color index are regarded as important signs Routine determination of the serum iron every six months in patients controlled for pernicious anemia would contribute to early diagnosis of cancer of the stomach A low color index is an indication for roentgenography

26:747-794 (April 6) 1945 Partial Index

Clinical Symptoms and Treatment of Venereal Disease S Hellerstrom —p 748
Bacteriology and Serology of Venereal Disease A Lindau —p 755
Potassium Bromide as Agent for Prevention of Orchitis in Epidemic Mumps O Leineberg —p 762

Hospitalstidende

Tuberous Sclerosis (Bourneville's Disease) W Højer Pedersen —p 763
Investigations on Diazo Reaction of Bilirubin T With —p 769

Duodecim

Carbon Monoxide Poisoning L Noro —p 771

Hygiea

*Indications for Suction Drainage of Cavities V O Bjork —p 777

Suction Drainage of Cavities—Bjork says that tuberculous cavities should be treated individually according to their pathophysiologic condition The first indication for suction drainage is the obliteration of the pleural space Isolated cavities, giant cavities and residual cavities after thoracoplasty are ideal for suction drainage The method is contraindicated when biologic cavities are surrounded by specific infiltrations, when there is a system of cavities or several cavities in the same lung and when intestinal tuberculosis is clinically manifest After preliminary treatment with suction drainage, thoracoplasty can be carried out on a smaller scale Toxic products are removed by suction drainage and the general condition is improved The mechanical factors which increase the size of the cavity are removed and the surrounding atelectasis disappears The treatment is not ended until the drainage bronchus is closed

26:795-842 (April 13) 1945 Partial Index

Vitamins and Resistance H Natvig —p 795
Factors Causing Reaction and Element of Risk in Infusions and Transfusions G Windstrom, O Wilander and B Svedberg —p 800

Hospitalstidende

Magnesium Sulfate Treatment of Acute Glomerulonephritis A Svensen —p 809

Norsk Magasin for Lægevidenskapen

Sinus Arrythmia and Disturbances in Sinoauricular Conduction O Jervell —p 815
*Experiences with Quinidine Treatment of Auricular Block Helge Laake —p 820
Coarctation of Aorta Combined with Infantilism and Intraventricular Block G Larsen —p 824
*Roentgenologic Examination of Heart in Elderly Persons O Jervell and H Vold —p 828

Hygiea

Intoxication with Organic Compounds of Mercury T Herner —p 833

Quinidine in Auricular Fibrillation—Laake reports that of 34 patients with auricular fibrillation the condition responded to treatment with quinidine in 23 and has been so maintained for over three months in 16 The earlier the change to sinus rhythm occurs the better the prospect for permanent regularization It is essential for good results that the fibrillation has not been present for more than six months Slight cardiac enlargement does not seem to affect the result All patients received preliminary digitalis treatment

Roentgenologic Examination of Size of Heart in Elderly Persons—Roentgen examination was made in 200 persons over 70, of whom all but 17 had organic heart disease and/or hypertension Jervell and Vold conclude that coronary sclerosis will cause dilatation of the heart even though the blood pressure is normal As a result of the cardiac dilatation asystolia with or without fibrillation will set in at some time Frequently, as in angina pectoris, the heart is not enlarged in spite of the electrocardiographic changes Of 33 patients with normal blood pressure 21 had an enlarged heart Exclusive of patients with rheumatoid and syphilitic heart disease the heart was dilated in 89 of 121 patients with hypertension

Book Notices

Penicillin in the Treatment of Infections. By Chester S. Keefer, B.S., M.S., M.D., Wade Professor of Medicine, Boston University School of Medicine, Boston, and Donald G. Anderson, A.B., M.D., Instructor in Medicine, Boston University School of Medicine, Boston. Edited by Henry A. Christian, A.M., M.D., LL.D., Clinical Professor of Medicine, Tufts College Medical School, Boston. [Reprinted from Oxford Loose-Leaf Medicine with the same page numbers as in that work.] Cloth. Price, $1.50. Pp. 201-249, with 14 illustrations. New York, London & Toronto: Oxford University Press, 1945.

This is a systematic and workmanlike review of the current status of penicillin in its most familiar therapeutic applications. In a field developing as rapidly as penicillin therapy, it was perhaps inevitable that any such book would be somewhat inadequate by the time it could be published. We believe the list of penicillin-sensitive organisms given here could now be made somewhat more inclusive; likewise the list of penicillin-resistant organisms. The discussion of penicillinase seems scarcely to do justice to this rather useful laboratory agent. The subcutaneous injection of penicillin might have been more clearly revealed as unsatisfactory and undesirable. Something more might now be said about oral administration, although this was perhaps difficult at the time this section was written. Topical therapy by means of troches and ointments would seem to be worth discussion at this time. Another important form of administration, the aerosol, must now be seriously considered, and adequate discussion of this method would be of much interest.

Urethrocystography in the Male with Special Regard to Micturition. By Nils P. G. Edling. From the Roentgen Diagnostic Department of Karolinska Sjukhuset, Stockholm, Paper, Price, Cr. 20. Pp. 144, with 66 illustrations. Stockholm: P. A. Norstedt & Söner, 1945.

In this monograph the author describes and illustrates the urethrocystographic findings in men. The material consists of normal and pathologic cases. The normal material consists of 21 urethrocystographies and the pathologic of 216. The findings obtained by injecting the urethra and bladder with contrast mediums through the external urethral orifice are compared with the roentgenograms obtained during the act of micturition. The book is well written and the subject matter presented in a systematic manner. The author begins with a careful survey of the literature. Then follows an anatomic and physiologic survey. In his discussion of the technic he also calls attention to the possible complications. The illustrations are clearcut and are faithful reproductions. The wide variety of lesions studied permits the author to arrive at certain conclusions regarding micturition. The reproductions of the cystourethrograms during micturition are all that could be desired and are exceedingly interesting and instructive. Apparently the war made some of the recent literature unavailable to the author. This is unfortunate, especially in view of the fact that so much recent work along this line has been done in this country on patients with prostatic obstruction—truly, more than in any other country—and yet one fails to find mention of it. This type of monograph should be of great interest to the physiologist, the urologist and the roentgenologist.

American Pharmacy: Fundamental Principles and Practices, Pharmaceutical Preparations, Biologicals. Editor-in-Chief, Rufus A. Lyman, M.D., Dean, College of Pharmacy, University of Nebraska, Lincoln. Technical Editor, George Urdang, Ph.G., D.Sc.Nat., Director, American Institute of History of Pharmacy, Madison, Wisconsin. Cloth. Price, $8. Pp. 540, with 197 illustrations. Philadelphia, London & Montreal: J. B. Lippincott Company, 1945.

This book is an ambitious, well conceived attempt not only to cover the wide range of contemporary pharmacy but also to rationalize the subject in terms of modern science. In general, this objective seems well achieved, although some of the chapters, particularly those dealing with pharmaceutical products of biologic origin, seem too abridged to convey a basic understanding of the subject.

The discussion of the various pharmaceutical classifications of drugs and their preparations seems quite adequate both for the student and for the practicing pharmacist. Here the subject matter is well selected and treated with scholarly discernment.

The failure to include any dissertation on prescription practice is a defect which militates against its general acceptance. As the dispensing pharmacy is the acme of professional pharmaceutical service, certainly so far as the neighborhood drug store is concerned, it seems reasonable to presume that it would have received serious consideration in a book so comprehensive in scope. Of course, it can be contended that dispensing pharmacy is a textbook subject in itself and hence it was not advisable to include a single chapter condensation of it. But the same contention can quite justifiably be made with respect to many of the subjects to which a chapter was allotted.

Then too the title "American Pharmacy" seems a bit inept, as the scientific data presented, as well as the pharmaceutical technics and manipulations exemplified, are universal and are thus in no sense common to America. The title seems instinctively to impose a limitation on that which is illimitable. All in all the book, while excellent as a whole, suffers from this unnecessary and doubtless unintentional deference to provincialism.

One Hundred Years of Gynaecology, 1800-1900: A Comprehensive Review of the Specialty During Its Greatest Century with Summaries and Case Reports of All Diseases Pertaining to Women. By James V. Ricci, A.B., M.D., Clinical Professor of Gynaecology and Obstetrics, New York Medical College, New York. Fabrikoid. Price, $8.50. Pp. 651. Philadelphia: Blakiston Company, 1945.

Dr. Ricci presents a detailed history of the development of gynecology during the century between 1800 and 1900 A. D. Following a brief introduction entitled "Medical Trends of the Nineteenth Century," he considers the various diseases pertaining to women. The development of medical thought concerning each clinical entity is presented by means of summaries, publications, case histories and pertinent historical references. Thus he presents a complete story covering the pathology, diagnosis and treatment of each gynecologic condition, all of which is thoroughly authenticated by an extensive bibliography. This monumental textbook was made possible by the help of Edward W. Schiels of the Library of the New York Academy of Medicine together with the assistance of Elma Wadsworth. This scholarly treatise on the history of gynecology during the fruitful nineteenth century should be read by every specialist and become an important reference book in his library.

Pharmacopoeia Londinensis of 1618, Reproduced in Facsimile, with a Historical Introduction. By George Urdang. State Historical Society of Wisconsin, Madison, Hollister Pharmaceutical Library, Number Two. Cloth. Price, $12. Pp. 299, with illustrations. New York: Schuman's, 1944.

The facsimile now makes available that rare and almost forgotten first First Edition of the London Pharmacopeia, published by the Royal College of Physicians on May 7, 1618. The book was almost immediately withdrawn from circulation, however, and was replaced on December 7 of the same year by a revised and enlarged edition which was to be recognized as the "First" by dictum, remaining in use as the official guide of physicians and apothecaries until the second was issued in 1650. While formularies had previously appeared on the continent, this was the first Anglo-Saxon attempt, and its effect was in general more far reaching than others had been, becoming the forerunner of other editions of the London Pharmacopeia and finally of our own United States Pharmacopeia.

Of no less interest to having this rare volume made available is the historical review which takes up most of the first hundred pages. Dr. Urdang, with his remarkable gift as a historian, has turned back the years for the reader with his history of this true first. Beginning with a splendid analysis of the background of the day, particularly from the changing medical influences, he has traced the conditions leading to the preparation of the London Pharmacopeia, and particularly has he critically analyzed the two "firsts," in the manner of the true historian and investigator, to find the facts in the case, especially the reasons for recalling the initial book so promptly and replacing it with one which differed in many material respects. His deductions become very fascinating and entirely logical, and undoubtedly he has cleared a phase of medical-pharmaceutical history which had never been examined so critically and thoroughly before.

Two hundred and sixty footnotes provide abundant additional facts pertaining to the book and to individuals bearing on the period, as well as reference material for the one who wishes to make further excursions into fields related to those so entertainingly presented by the author.

Queries and Minor Notes

The answers here published have been prepared by competent authorities. They do not, however, represent the opinions of any official bodies unless specifically stated in the reply. Anonymous communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

MOTOR TICS

To the Editor:—*A man aged 30 has had a tic for almost fifteen years. At first the condition consisted in spasmodic movements of the shoulder muscles, but gradually some other muscles became involved and at present the patient experiences jerkings occurring in the shoulder and cervicofacial muscles of the right side. The man, an engineer, is much worried about his trouble. Please suggest a plan of treatment.*

Arnulfo Valencia, M.D., Cali, Colombia, South America.

Answer.—Motor tics, limited to a few muscle groups, offer some possibility of alleviation by surgical intervention. Drug therapy is not of value. If a single group of muscles can be isolated, such as sometimes occurs in spasmodic torticollis, either by cutting the muscle or by denervation, the tic may be relieved. This is specially applicable to spasmodic facial tics (German, W. J.: *Surgery* **11:**912 [June] 1942). As in the case described, however, there is often a tendency for the tic to spread by involving adjacent muscles, and more and more operations are required until a point is reached where further cutting would severely incapacitate the patient.

Recently, on the basis that tics originate in or are closely associated with the motor cortex cells, operations on the areas corresponding to the muscles involved have been advocated, similar to the procedures used to remove scars in cases of cortical epilepsy (Penfield, Wilder, and Erickson, T. C.: Epilepsy and Cerebral Localization, Springfield, Ill., Charles C Thomas, 1941). The patient needs to be studied from this point of view, with electroencephalograms, air encephalograms and an evaluation of the spinal fluid. Evidence of birth injury to the brain should be sought, as well as a complete history of previous illnesses, such as meningitis or encephalitis. Should the findings suggest a localized cortical lesion, surgical exploration might be advised, but in view of the involvement of the right side of the body in this patient, who may also be right handed, the possibility of aphasia as a complication from the operation would have to be fully weighed before a decision is reached.

Some patients with tics have responded to psychotherapy, but, without a background of emotional instability or other psychogenic mechanisms, one would not expect an engineer of 30, with a tic of fifteen years' duration, to profit by a prolonged psychologic study. A brief study, however, would certainly be an essential part of any examination, and a more complete investigation could be determined only if profitable lines of psychotherapy were disclosed.

MASSIVE EDEMA FROM THROMBOPHLEBITIS

To the Editor:—*A patient aged 43 following a severe attack of thrombophlebitis in 1931 has developed a tremendously edematous right leg and thigh. My patient, who is overweight, is trying to reduce but, in the meantime, I cannot prevent frequent attacks of severe lymphangitis. The lymphangitis attacks are severe—temperature 105 F.—but were amenable to sulfamerazine and are now even more satsifactorily treated with penicillin injections. What can I do to prevent the frequency of these attacks of severe lymphangitis? I have tried daily sulfathiazole ointment but without avail. Would you suggest ultraviolet therapy to the skin?*

M.D., Illinios.

Answer.—Huge thrombophlebitic edemas are usually a combination of venous and lymphatic obstruction. When acute attacks of lymphangitis occur with chills and fever, the organism may be recovered from the blood stream if a blood culture is obtained as rapidly as possible after the appearance of the chill. Autogenous vaccines can then be prepared so that the patient may receive a series of twelve subcutaneous injections of the vaccine.

Such flare-ups are often initiated by trauma, by a local infection of the foot (ringworm!), by an attack of tonsillitis, or by a respiratory infection. Obviously the lymphatic apparatus of such a patient is in a susceptible state and reacts with great intensity to a small, nonvirulent dose of an organism, which produces no reaction anywhere else in the body. Penicillin or sulfonamides are useful only during the acute attack and should be used in massive doses (200,000 to 300,000 units of penicillin, 120 grains [8 Gm.] of sulfadiazine daily). Eventually some type of autoimmunization takes place, but at the expense of much permanent lymphatic block.

SENSITIVITY TO ASPIRIN

To the Editor:—*A man aged 30, with irrelevant past history or history of allergy within half an hour after ingestion of a 5 grain (0.32 Gm.) aspirin tablet for relief of a simple headache developed an urticarial rash with severe edema and extremely intense pruritis. Seven months later and for the same reason he took a tablet containing acetophenetidin 2½ grains (0.16 Gm.), aspirin 2½ grains and caffeine ½ grain (0.03 Gm.) and again had the same reaction. Both episodes, with gradual subsidence, lasted three days. I should like to know a simple procedure of testing him for sensitivity to aspirin and also to acetophenetidin.*

M.D., New York.

Answer.—There is no successful method for testing drug sensitivity except by clinical trial. Skin tests of various types are not applicable in the study of drug sensitivity. The experience of the patient in this case is enough to make a definite diagnosis of allergy to aspirin. The chemical relationship of aspirin to acetophenetidin is close enough so that the patient also may be sensitive to the latter drug. It is advisable to avoid aspirin even in the minutest doses in such a case, since future reactions may be much more severe than the one noted and may be even dangerous.

EPHEDRINE AND IMPOTENCE

To the Editor:—*A man with bronchial asthma reports that during the asthmatic attacks he takes a moderate amount of ephedrine and for several days thereafter finds himself impotent. I can find nothing about the effect of this drug on a person's ability to get an erection. Is there an association or must the trouble be explained on some other basis?*

Thomas G. Harvey, M.D., Fort Fairfield, Maine.

Answer.—Suppression of erections by ephedrine does not appear to have been reported previously. The wide use of the drug makes it improbable that such action would have been overlooked. Presumably the patient's reaction is a conditioned inhibitive reflex originating from an accidental association.

RETROBULBAR NEURITIS IN PRISONER OF WAR

To the Editor:—*A prisoner of war in the tropics from March 1942 until Aug. 10, 1945 was under unfavorable conditions regarding food (highly polished rice, small quantities of vegetables and dried fish of inferior quality). He is 50 years of age and except for dropsy from December 1944 until April 1945 developed no deficiency disease. The blood pressure was 135/85. In January 1945 troubles with vision started. Two qualified ophthalmologists found the right and left fundus normal. There was a central scotoma, right and left and total paralysis of accommodation. Since liberation the food has become better (calories and protein [canned) and multivitamin tabloids). Up to now there has not been any amelioration. The patient was a heavy smoker. I understand that American doctors have seen and treated similar cases from the Philippines. Although I have worked in the tropics for more than twenty years I have never come across a deficiency disease like this one (so-called neuritis retrobulbaris).*

M.D., Singapore.

Answer.—The syndrome described in this query is evidently that of retrobulbar neuritis. This condition occurs in deficiency diseases and has been described frequently in the literature particularly from the Far East (Verma, O. P.: *Indian M. Gaz.* **77,** November 1942, through *J. Trop. Med. & Hyg.* **46:**7 [Feb.-March] 1943. Guha, G. S.: *Indian J. Ophth.* **1:**103 [July] 1940. Moore, D. F.: *J. Trop. Med.* **42:**131 [May] 1939; *Lancet* **1:**1225 [May 22] 1937). Retrobulbar neuritis, however, may occur independent of deficiency disease. In these cases its response to nutritional therapy is irregular and unpredictable.

The prognosis of retrobulbar neuritis associated with deficiency disease is generally better than that occurring independently and is somewhat dependent on the duration, early cases giving a good prognosis and later cases responding slowly, if at all, to therapy.

Treatment should consist in dietary correction, large doses of the whole natural vitamin B complex (1 to 3 ounces of yeast daily by mouth) and the synthetic vitamins (10 mg. of thiamine hydrochloride, 5 mg. of riboflavin, 50 mg. of niacinamide and 100 mg. of ascorbic acid) by mouth or by intramuscular injection if there is impaired absorption.

TRANSMISSION OF POLIOMYELITIS

To the Editor:—*From a children's camp near Honesdale, Pa., 11 cases of poliomyelitis were reported within two weeks. The source has not been discovered. Should children return to this camp next summer?*

M.D., New York.

Answer.—The means of spread of the virus of infantile paralysis has not been worked out completely. It is, however, recognized that the disease is not one due to a "place infection" but is transmitted from person to person probably both directly and through vectors. Therefore there would appear to be no reason for not recommending a summer camp, dwelling or community because cases were reported there during the previous year.

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DEVELOPMENT OF HIGH EDUCATIONAL STANDARDS BY THE MEDICAL PROFESSION

RAY LYMAN WILBUR, M.D.
Chairman, Council on Medical Education and Hospitals, American Medical Association
Stanford University, Calif.

Education has advanced in our republic steadily but unevenly along a very wide front. The differences in economic strength of the various states have made this unevenness of advance especially noticeable in some of the professional fields, particularly in medicine, which for the most part flourishes best in the large centers of population.

In medicine it has been demonstrated that it is possible for a profession organized by county and state, as well as nationally, to have a profound influence on all medical schools, hospitals and educational institutions throughout the nation and also to stimulate legislation by states requiring qualifying examinations and the registration of properly trained professional personnel. All of this has been done chiefly through the cooperation of willing members of the profession and the earnest desire to raise and maintain high standards of professional achievement. It has been done by the physicians themselves, without the power of coercion and primarily through the recognition of unselfish leadership and through the persistent and regular presentation of facts about medical institutions and medical education, and through state laws.

It is remarkable to look back over the last forty years and see how a profession has been able to influence educational institutions that provide its membership, and to see how the confidence of the public has been gained and how prestige has been established. It was forty-odd years ago that the American Medical Association, stung by the charges made of the low quality of many of the nation's medical schools, and stunned with the suddenness of the encroachments of the laboratory into the field of medicine from all directions, organized the Council on Medical Education as one of its constituent councils. The Council went to work in cooperation with the Association of American Medical Colleges and later the Federation of State Medical Boards of the United States, the Advisory Board for Medical Specialties and the American Hospital Association. A considerable part of this widespread and effective program has come from the meetings of the Annual Congress on Medical Education and Licensure, held in Chicago each February by the representatives of the institutions concerned under the auspices of the American Medical Association. The setup of voluntary control has functioned through publicity, the presentation of ideals, the interchange of information, the give and take of discussion and the development of standards without required regimentation.

It all seems very simple as one looks back on it, but there has been a constant struggle over the years between those holding for high standards and willing to fight for them and those seeking to take indirect and unearned advantage of these standards for certain institutions or men without meeting the requirements that at first were voluntary but eventually became mandatory by state legislation.

I have often been asked just what is the power of the Council on Medical Education and Hospitals that has made its actions so effective. One of the most helpful things has been the classification of medical schools as approved, unapproved or on probation after a careful study of the institutions concerned (usually in cooperation with representatives of the Association of American Medical Colleges) and the presentation of ascertainable facts to the institutions and later, if need be, to the profession. Often these facts have been presented on a comparative basis, as was done in Medical Education in the United States, 1934-1939, by the committee headed by Dr. Herman G. Weiskotten, prepared under the auspices of the Council. It has been possible to keep medical education abreast of the laboratories and the many clinical advances made in medicine. The best test of the results that have been obtained has been given in World War II, in which I think one can assert without contradiction that the graduates of the last quarter century from our American medical colleges have done the best practical job in medical care and public health that has ever been done in the history of the world.

Many of these accomplishments have been due to the close linkage between medical education and the universities, also to the development of the hospital as a teaching institution in direct relationship with the staffs of the medical schools. The viewing of the intern year in the hospital as a part of medical education and the residencies in the hospitals as a part of advanced (so-called "postgraduate") medical education has made it possible to classify and issue a public register of hospitals throughout the United States and to indicate those with facilities for training interns and residents.

One of the most important phases of the work of the Council and of its close associate, the Association of American Medical Colleges, has been to keep a personal record of all premedical and medical students and physicians. By maintaining a record from his premedical days to the death of the physician and by the publication of the Directory of the American Medical Association covering the profession and the achievements and interests of its members, a great service has been rendered. That record has become invaluable in the

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interests of medical men and the movement of patients from one part of the country to another, as well as essential to military and public health services. Innumerable relationships with the medical services have been created. All of this has been accomplished without national legislation.

There has also been established the National Board of Medical Examiners on a voluntary basis but with a high standard. Periodic examinations are given by the National Board and by examining boards of the various specialties. These have done much to protect the public from those who are ill trained in the care of the sick. Over all these years there has been a constant battle against those who, for selfish interest, preferred low standards and the cultists of all sorts who had some short answer for the treatment of human ailments.

Another outstanding achievement is that the internship has become generally recognized as a necessary part of medical education, even though the internship is now required by only six medical schools for the degree of Doctor of Medicine and by twenty-three states and the District of Columbia for a license to practice.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION has been a great source of strength in dealing with the problems of medical education. Not only have special issues, such as Hospital Numbers and Educational Numbers, been regularly presented, but educational information has been presented consistently and persistently throughout the year.

In brief, I think that the outstanding job done by the Council on Medical Education and Hospitals has been to raise the general level of medical education throughout the medical schools in the United States without having any power beyond that of classification and the presentation of facts in the publications of the American Medical Association. It has been a strictly American-style job. The Council has set up certain requirements and kept them flexible enough under the guidance of the Council to be effective without being destructive.

Medicine has been in the forefront of the advance of science. Every new scientific discovery has been at once looked over by trained physicians and laboratory men to see whether there could be a possible application to the relief of suffering or to the treatment of the sick. This has meant an elevation in the level of training during the premedical and medical years without which the future doctor could not follow the advance of medical science or understand the results of medical research.

At first it was thought that a general college education leading to the Bachelor of Arts degree was a maximum preparation for the medical course. This did lead to a diversity of preparation which if it had brought about habits of study seemed adequate at the time. It soon became clear, though, that even before admission to the medical school there must be sound training in physics, chemistry, anatomy and biology if one was to take on the medical course without loss of time. Basic science laws had been passed in some states so that those preparing to treat the physical ailments of human beings would have some idea of the science of medicine. A two year college course including chemistry, biology and physics has been recognized as the minimum premedical requirement.

In the four year course in the medical school there has been an attempt made to provide for some training in all the different branches of an advancing science. If a program has been once established in the curriculum, or adopted by a state legislature as the required training for admission to examination for medical practice, it is difficult to change it. I once said that changing an established curriculum was as difficult as moving a cemetery. It still is. Four years and the rotating intern year are none too long to gain a sound medical education; but there is much wastage of time in the present setup. This has come about by overdepartmentalization, emphasis on minor details, the duplication of teaching by representatives of different departments and the long summer vacation.

A LOOK AHEAD

As hospitals and clinics operate throughout the year there is no good reason why much of the clinical teaching cannot be given during the so-called summer vacation period. By the establishment of a four quarter system, making a full use of the summer quarter, it would be possible to cover practically the present four year medical curriculum in the course of three calendar years.

The laboratory and the clinic can and must be brought into close relationship to the patient, with the student participating in all the studies that are made.

Specialization is inevitable, and group practice is desirable. The future of medicine will be played out around medical centers, now existing and to be established, where all the institutions and workers in medicine come together and make a pool of medical knowledge. The volume of medical information is now far beyond the capacity of any one person. If a patient is to have full benefit of what is known then, if his disease is not a simple one, he must come in contact with a number of medically trained men and women organized in a group. The most successful physicians have always been constant students who by the use of books or medical periodicals, conferences, medical societies and visits to clinics have kept in touch with the latest and most efficient methods of diagnosis and treatment. Working in groups makes absences for further study or needed vacation possible without undue losses to patients or physicians.

The costs of medical education are heavy. It will be increasingly necessary for scholarships to be developed so that promising men or women students will not have to interrupt their medical training by outside work in the summer or other times in order to secure funds. These scholarships in some instances can be provided by states in lieu of developing medical schools, many of which have been proposed in places where the clinical material is scattered or unsatisfactory in quantity. It is inevitable that medical education, as well as medical care, will require more and more in the way of expense.

Unfortunately too, while there is time saving through modern transportation, the automobile, the airplane and the telephone, the practice of modern medicine becomes increasingly expensive. For instance, to adopt just what has been done recently for our soldiers and sailors as a regular procedure for the whole of our civilian population in the way of preventive medicine, or in the way of care when either disease or wounds are present, would bring the costs of medical care in the United States to fantastic amounts. With our present thinking, what is tolerated in wartime in preventive medicine would be almost impossible to put through in peacetime among the whole population. Public thinking, public understanding is still at the "magic weed juice" level, if radio advertising is used as a measuring stick.

More equipment and, above all, a more highly trained personnel are now required in every medical center. There will need to be an increase in skilled trained nurses and laboratory technicians.

Particularly is this true in the field of physical medicine, which is now coming into its own. The human machine is a biologic instrument that has been played on by forces in the world environment over the whole period of human history. The effect of these forces, such as heat and cold, sunshine and shadow, led to adaptations that have carried man to all parts of the earth. The treatment of the sick has gone through periods when the applications of what we now call "physical medicine" have been widely and wisely used. With the new medicine that came out of the laboratory and the clinic, many of these therapeutic processes were largely forgotten. There is now a fortunate revival of the procedures of physical medicine at a time when the various rays show promise of giving material aid to the sick and when we are finding it possible to tag certain electrons so that we can follow their distribution throughout the body. This gives us hope that we can selectively treat with the various elements parts of the body that are subject to disease processes.

The social side of medicine is now the subject of a great national debate, for which the doctor has been ill prepared. His interest has been in the care of the sick. The congested premedical and medical course left little time for the study of economics or the so-called social sciences. The doctor's interest in the development of the hospital has been primarily that of a professional man seeking the best possible environment for those under his care.

The university hospital has been of great advantage to medical education. It is clear now that, since its work is thorough and often that of research, the university hospital, as we know it, cannot long survive on the income of invested funds. Free beds in the older hospitals often have to have a dozen or more endowments to support a patient for 365 days in the year. Support of hospitals used for teaching must come from prepaid hospital insurance or be government supported, by either the city, the county, the state or the national government.

The hospital or the clinic, as part of a medical center, must form the basis for clinical teaching. To keep medical education on that basis which has been so successful in the past, and to give it individual quality and permit experimentation and medical research, we must find a way to advance and support these medical centers without the profession and the educational institutions losing control of the organization of the staff and the training of the young physician.

The embryo doctor entering the field of medicine needs a brain and body of good durable quality. He must also have a strong sense of duty, a desire to help suffering human beings and to discover the truth—pleasant or unpleasant. He must have a good social sense, reliable moral character and high ideals of service, and he must believe in the human family as the unit of civilization. Each such medical student must make a study of his own qualities and his own interests. If we are to advance in some of the more difficult fields of medicine in the years ahead we must discover those who are capable of a life of research work, also those who find interest in administration and in psychiatry.

There has always been a certain number of those training in our medical schools who develop an interest in psychiatry. We now find ourselves under the necessity of identifying and increasing this number and of giving adequate training in a field of medicine which, while its practice is becoming more and more based on science, is still largely an art. In our advance in medical education we have done comparatively little for the large numbers of people who are to some degree held captives to society because of injury, disease or mental condition. The tens of thousands of patients that are now occupying or will soon occupy our veterans' hospitals, the mass of prisoners confined, often for long periods, in our jails and penitentiaries, the mentally deficient and the insane in our public institutions, the alcoholic and the drug addicts have been largely passed by in high types of medical care and in medical education. Up to a certain point it will be necessary for us to give about the same training to those students who are to enter the field of psychiatry as that of our other medical students; but there seems to be no good reason why we should give elaborate training in surgery and the various specialties at least during the latter part of their medical course and perhaps the intern period to such students.

Along with the training in psychiatry we must follow out a regular campaign to control and protect the insane, so that they will be handled from the standpoint of medicine rather than that of jurisprudence. When human beings begin to slip mentally their first contact should not be with the policeman but with the highly skilled staff of a mental institution, and at first on a voluntary basis. Our high speed civilization is full of perils and penalties. One of our present peculiarities is to try to increase materially the unoccupied or idle time of our fellow citizens. This has always struck me as an unwise procedure. It is just as unwise to have too much time to waste as it is to have too many hours of work. Sensible recreation is a matter of sound living. Uninhibited human beings in the presence of the emotional stimulation of such things as the theater, motion pictures and the races and with free access to alcohol and habit forming drugs will provide many unhappy patients for the psychiatrist, who will need to guide them to an adequate social adjustment.

In the look ahead, public health and governmental relationships to medicine of one kind or another are bound to become of increasing importance. Just how to discover those physicians who have administrative ability and who can deal with the public in preventive measures and who can keep the science of medicine in tune with the responsibilities of the individual and the family is going to be one of our most difficult tasks. Housing as it is developing in our larger centers is making the care of children and of the aged and infirm more and more difficult within the shelter of the family. For their care we shall need additional institutions with trained administrators and staffs. We are prolonging life by the control of infections and by more knowledge of nutrition, but our knowledge of geriatrics is in the infantile stage in comparison to what we should know. Journalists are asking every available centenarian to explain his ability to hang on to life so long and, as far as the newspaper reports go, he did so by some violation of what is ordinarily considered good hygiene.

We are finding peace as hard to take as was war. For centuries the physician has done his best work with the priest or the pastor at his side. Speed highways and speeded up machinery on the farm and in the factory make for instability of the nervous system. Science has made the doctor an invaluable if not an inevitable part of most phases of life. If the future doctor can combine science with the humanity, sympathy and understanding of the old family physician, much of the harshness and frustrations of what we now call civilization can be mitigated. Medical education can be molded with the needs of our fellow men if we can keep the profession alert to the preparation of those in training. We must act as a profession and not let medicine drift into the eager, frigid hands of the bureaucrat.

REACTIONS IN PENICILLIN THERAPY

LIEUTENANT MAXWELL H. KOLODNY
and
MAJOR ERIC DENHOFF
Medical Corps, Army of the United States

During the course of penicillin treatment of patients with cutaneous ulcerations, 2 developed generalized erythematous, maculopapular rashes. An exacerbation of the underlying dermatitis was observed in several other patients treated similarly. These reactions were at first thought to be due to impurities in the lot of penicillin or its diluent. It was found, however, that a group of syphilitic patients being treated with identical materials was showing no comparable reactions. Inquiry throughout the hospital revealed that, from time to time in various wards, medical officers had noted certain skin reactions during the course of penicillin therapy. The occurrence of these reactions, especially in patients in the dermatology wards, stimulated the present investigation.

There are many reports suggesting the occurrence of sensitivity to penicillin or to some associated impurity. Contact dermatitis[1] has been reported in persons engaged in its manufacture and in physicians and nurses handling the material. Cutaneous reactions[2] allergic reactions including urticaria,[3] asthmatic attacks[4] and a syndrome which clinically resembles serum sickness[5] have been described. In some general reports on penicillin therapy, references are made to similar reactions.[6]

SUBJECTS AND METHODS

A total of 124 patients, all young men, were observed for immediate and delayed reactions to parenteral administration of penicillin. Seventy-three were patients from the dermatology section and 51 were patients from the general medical and neurosyphilis sections. Of these, 46 dermatologic and 33 general medical or neurosyphilis patients were given penicillin specifically for the purposes of this study. They were given 20,000 units of the sodium salt in distilled water every three hours for eight doses totaling 160,000 units. The other patients were given various dosages of penicillin depending on the disease for which they were being treated. From all patients a detailed medical history was obtained concerning personal and familial allergies, previous skin diseases, drug intolerance, penicillin handling, previous penicillin therapy in any form and any reactions referable to it.

All the penicillin was administered intramuscularly. Records were kept of lot number and manufacturer. Many reactors were retested at varying intervals after the first reaction with either the same lot, a different lot or a different brand. Intradermal skin tests were performed, 250, 1,000 and 2,000 units being used per test dose (0.1 cc.). Skin tests with trichophytin 1:30 were performed concomitantly.

RESULTS

A total of 21 immediate and 11 delayed reactions were observed (tables 1 and 2). These were of several types.

Immediate Reactions.—It will be noted in table 1 that a greater number of immediate reactions occurred in patients with dermatologic disorders (25 per cent) than in patients of the general medical and neurosyphilis group (6 per cent). Eighteen of the 21 reactions were in patients with skin diseases, and in 17 of these exacerbation of a preexisting skin lesion with pruritus, hyperemia and exudation of serum was a prominent feature. Of this group 8 showed no other manifestations of a reaction.

The incidence of generalized rash, edema (periorbital and/or labial) and gastrointestinal reactions are also noted in table 1. In 4 patients an "id" reaction consisting of pruritus and vesiculation of the hands and feet, more intense in the interdigital webs, was seen. No immediate urticarial or febrile reactions were observed.

All reactions considered "immediate" appeared within twenty-four hours of the start of therapy; none appeared in less than ten hours. Further penicillin injections were discontinued in all but 3 cases on the appearance of a reaction. The reactions subsided within three to four days.

In 3 cases therapy was continued in spite of generalized erythematous eruptions. These subsided in four to five days without further untoward effects. Penicillin was not continued in cases in which generalized vesicular eruptions were present because of the possibility of precipitating exfoliative dermatitis.

The following illustrative case reports are presented:

Case 1.—A white soldier aged 25 first sought medical attention for dermatitis of the legs in December 1944 in New Guinea. It did not respond to local therapy. He was returned to a general hospital in the United States, where he was diagnosed as having severe "fungous" infection of the legs and feet. His past history was noncontributory, and routine laboratory examinations revealed no abnormalities. He was given local treatment with potassium permanganate soaks, boric acid compresses and salicylic ointment with progressive, satisfactory improvement.

Three months later he was given 160,000 units of penicillin intramuscularly over a period of twenty-four hours. About twelve hours after the first injection a rash was noted on the flexor surface of the left forearm. This spread rapidly over the abdomen, chest, back and shoulders. It was diffuse, finely papular, erythematous and pruritic. Within twenty-four hours it became finely vesicular. The vesiculation and pruritus were somewhat more accentuated in the groin and the areas previ-

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From the Army Service Forces, Eighth Service Command, Harmon General Hospital, Longview, Texas.

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[6] Keefer, C. S.; Blake, F. G.; Marshall, E. K., Jr.; Lockwood, J. A., and Wood, W. B., Jr.: Penicillin in the Treatment of Infections: A Report of 500 Cases, J. A. M. A. **122:** 1217 (Aug. 28) 1943. Herrell, W. E.; Nichols, D. R., and Heilman, Dorothy H.: Penicillin, ibid. **125:** 1003 (Aug. 12) 1944. Thompson, G. J.: The Clinical Use of Penicillin in Genitourinary Infections, ibid. **126:** 403 (Oct. 14) 1944. Moore, J. E., and Mahoney, J. F.: The Treatment of Early Syphilis with Penicillin, ibid. **126:** 67 (Sept. 9) 1944. Stokes, J. H., and others: The Action of Penicillin in Late Syphilis, ibid. **126:** 73 (Sept. 9) 1944. Anderson, D. G.: The Treatment of Infections with Penicillin, New England J. Med. **232:** 423, 1945. Flinn, L. B.; McGee, L. C.; Featherston, W. P., and Kern, D. O.: Skin Lesions Attending the Use of Penicillin, Delaware State M. J. **17:** 133, 1945. Lyons, Champ: Penicillin Therapy of Surgical Infections in the U. S. Army, J. A. M. A. **123:** 1007 (Dec. 18) 1945.

ously involved by the dermatitis. At this time the patient's face had become moderately edematous.

The reaction subsided on the third day without therapy. The erythema faded and was followed by fine desquamation. There was no increase in eosinophilic leukocytes. Penicillin and trichophytin skin tests performed ten days later were strongly positive.

CASE 2.—A white man aged 34 who went to the Southwest Pacific Theater in November 1942 sought medical attention in December 1943 because of irritation in the popliteal region which was considered to be due to fungous infection. Local therapy produced only temporary relief. The patient continued to have periods of remissions and exacerbations, but eventually the dermatitis spread so that both legs were severely affected. Superimposed on the dermatitis were several dirty ulcers. He was returned to the United States in July 1945. Here he was found to have lichenoid lesions on both legs, with eczematoid dermatitis on the right leg and foot. He received potassium permanganate soaks and penicillin ointment. The ulcers healed satisfactorily, but the surrounding skin became irritated, and multiple small vesicles appeared in the areas where penicillin was applied. Penicillin was discontinued, and the vesiculation and irritation promptly subsided.

His past history was entirely noncontributory, and aside from the current illness he had never had skin disease or received penicillin in any form. In October 1945 he was started on 20,000 units of penicillin intramuscularly every three hours. Eleven hours after treatment was begun he developed periorbital edema, and within the next twelve hours there was so much swelling that he could barely open his eyes. No further therapy of any kind was given and the reaction subsided completely by the third day. One week later he was given a similar course of penicillin of another brand. A similar reaction was produced. A skin test with penicillin showed a moderate reaction; the trichophytin skin test was only weakly positive.

Delayed Reactions.—These occurred in approximately 7 per cent of the cases (table 2). There was no significant difference in incidence of reaction between the dermatologic and other groups. No asthmatic or febrile reactions were encountered. Two patients showed both immediate and delayed reactions.

The delayed reactions were quite consistent in time of onset and clinical course. With one exception all occurred within seven to fourteen days after the beginning of therapy; in this one exception severe symptoms developed twenty-three days after a course of 480,000 units of penicillin had been started for acute follicular tonsillitis.

The reactions varied in severity. All showed generalized urticaria with pruritus. In addition, 5 patients developed swelling of the small joints of the extremities, edema of the face (chiefly periorbital and labial), moderate lymphadenopathy, generalized arthralgia, myalgia and malaise. All reactions subsided within four to five days. In 1 case penicillin therapy was continued in spite of a generalized urticarial reaction. This subsided on the sixth day and did not reappear, although the penicillin was continued.

The following case reports are illustrative:

CASE 3.—A white man aged 43, a sergeant, who went to the Southwest Pacific Theater in September 1943, developed a treatment-resistant fungous infection of the hands in July 1945 and for this reason was returned to the United States.

He was admitted to this hospital in August 1945 and found to have an eczematoid dermatitis involving the dorsum of the right hand and left index finger. He responded well to local treatment. On September 24 penicillin ointment was applied for the first time. Within a few hours there was a prompt flare-up of the dermatitis characterized by hyperemia, swelling, pruritus and exudation of serum. This subsided promptly after the ointment was discontinued.

Aside from malaria and dermatitis, his past history was entirely noncontributory. He had never received parenteral penicillin therapy and, to the best of his knowledge, never had had any contact with it. On Oct. 19, 1945 he was given 20,000 units of penicillin intramuscularly every three hours. Shortly after the third injection he noticed generalized pruritus, nausea and flatulence. Within two hours a finely papular, erythematous rash appeared over the shoulders, the back, the chest, the abdomen and the flexor surfaces of the arms. The healing lesions of the preexisting dermatitis became hyperemic, pruritic and wet. Some vesiculation was noted along the margins. The patient was observed without further therapy of any kind and within four days the reaction had disappeared almost completely.

On October 23 he was given a similar course of penicillin, another brand being employed. Within sixteen hours a reaction similar to the previous one, although somewhat less accentuated, had developed. On the eighth day after the first course of therapy (October 26) giant urticaria of the face, flexor surfaces of the lower extremities and the buttocks appeared. This was associated with generalized pruritus. Epinephrine gave prompt but transient relief. Ephedrine afforded less satisfactory but more prolonged relief. Skin tests with penicillin and trichophytin were both strongly positive.

TABLE 1.—*Incidence of Immediate Reactions and Relationship to Underlying Disease*

Underlying Disease	Number Tested	Number Reacting	Exacerbation	Rash	Edema	"Id" Reactions	G. I. Symptoms
Eczematoid dermatitis.........	32	11	11	1	2	1	0
Atypical lichen planus.............	13	3	3	1	2	1	0
Dermatitis undifferentiated.........	28	4	3	3	0	2	1
Total dermatologic patients......	73	18 (25%)	17	5	4	4	1
General medical patients............	19	1	0	1	0	0	0
Neurosyphilis......	32	2	0	2	0	0	0
Total nondermatologic patients....	51	3 (6%)	0	3	0	0	0
Totals.........	124	21	17	8	4	4	1

TABLE 2.—*Incidence of Delayed Reactions and Relationship to Underlying Disease*

	Number of Cases	Number of Reactors	Urticaria	"Serum Sickness"
Eczematoid dermatitis........	32	2	1	1
Atypical lichen planus.........	13	0	..	..
Dermatitis undifferentiated...	28	4	3	1
Total dermatologic cases......	73	6 (8%)	4	2
[illegible]	19	3	..	3
	32	2	2	..
	51	5 (10%)*	2	3
Total......................	124	11	6	5

* The slightly higher incidence in the medical group is more apparent than real because in it are included 2 patients specifically chosen for study.

CASE 4.—A white man aged 33 was evacuated to the United States in June 1945 after twenty months in the Southwest Pacific area because of recurrent malaria. Aside from this illness his past history presented nothing unusual. He stated that he had received eight injections of penicillin for an abscess of the leg in July 1945. On October 10 the patient reported the presence of a penile lesion. Dark field examination revealed the presence of Treponema pallidum. Serologic tests for syphilis were negative. On October 13 intramuscular penicillin 40,000 units every three hours was started. A total of 2,400,000 units was administered. On October 20, the eighth day after starting therapy, a generalized urticarial eruption with pruritus developed. There was moderate swelling of the small joints of the extremities, some arthralgia, generalized myalgia, moderate lymphadenopathy and malaise. The temperature rose to 100.6 F.

but subsided after twenty-four hours. The patient complained of nausea and vomited three times. He was given epinephrine, ephedrine and barbiturates with relatively little relief. The reaction persisted for four days and subsided completely after six. There were no laboratory abnormalities aside from an eosinophilia of 11 per cent.

TABLE 3.—*Relationship of Immediate Reactions to Previous Penicillin Therapy*

	Dermatologic Patients		Nondermatologic Patients	
	Number Tested	Number Reacted	Number Tested	Number Reacted
No previous penicillin	23	5	24	2
Previous	50	13	27	1
Local	17	5	0	0
Parenteral	20	6	27	1
Both	13	2	0	0

TABLE 4.—*Relationship of Delayed Reactions to Previous Penicillin Therapy*

Previous Penicillin	Number of Patients Tested	Number of Patients Reacting	Average Time of Onset After Start, Days
None	47	5	10
	17	1	11
	47	5	10
Local and parenteral penicillin	13	0	..

Relationship to Previous Penicillin.—Tables 3 and 4 indicate that the incidence of immediate and delayed reactions to parenteral penicillin bear no significant relationship to the history of previous penicillin therapy, either local, parenteral or combined. Contact dermatitis was observed, however, following local application of penicillin in 4 men who had been treated previously by local penicillin in the same skin areas.

When the time factor between courses of penicillin was evaluated, it was found that the incidence of reactions was the same in the group with an interval of more than thirty days between courses as in the group with an interval of fifteen to thirty days (table 5).

Correlation with Previous Reactions and Significant Factors in Medical History.—A number of patients who had given a history of a reaction to penicillin one to six months previously did not react when tested at this hospital. Moreover, a number of patients who previously reacted while under observation here failed to do so when retested two to six weeks later, even with the same lot of penicillin. There were, however, a group of 12 men who reacted consistently on at least three occasions to each administration of penicillin, both from the history and under our observation.

TABLE 5.—*Relationship of Interval Between Previous and Current Penicillin and Reactions*

Interval	Number Tested	Number Reacting		Per Cent
		Immediate	Delayed	
15 to 30 days	35	5	4	25
More than 30 days	12	2	1	25

TABLE 6.—*Relationship of Interval Between Reactions*

Interval Between Tests	Reactors Retested	Reactions Recurred
More than 1 week	5	5
Less than 1 week	7	2

When these 12 known reactors were retested with the same lot of penicillin at varying intervals, it was found that reactions could be repeated with some degree of consistency only if an interval of more than one week elapsed between the courses (table 6). The groups are small, but the observations appear to indicate that possibly an anergic state of several days' duration follows an immediate reaction.

Patients who gave histories indicative of drug intolerance, penicillin handling, previous skin disease and personal and familial allergies had the same incidence of reaction as patients who had no such history.

Skin Tests.—Intradermal tests were performed on representative groups of reactors and nonreactors (controls). After preliminary titrations it was found that 1,000 to 2,000 units per test dose (0.1 cc.) was necessary to elicit a relatively consistent response. Concomitant skin tests were performed with trichophytin antigen 1 : 30.

Of 15 reactors tested, 11 developed unequivocally positive intradermal skin tests to penicillin. Nine had positive trichophytin skin tests; 8 of these were sensitive also to penicillin. Fourteen nonreactors were similarly tested. Of these only 2 were found to show a positive skin test to penicillin, and, in both, the reactions were noticeably less intense than those observed in the first group. Five patients showed skin reactions to trichophytin. Two of these were particularly strong, and in these patients the skin test for penicillin also was positive (table 7).

TABLE 7.—*Skin Tests*

Reaction to Previous Penicillin	Number Tested	Number Positive Penicillin Skin Test	Number Positive Trichophytin Skin Test	Number Positive Penicillin Only	Number Positive Trichophytin Only	Number Positive Penicillin and Trichophytin
Reactors	15	11	9	3	1	8
Nonreactors	14	2	5	1	4	2

The skin tests were all of the immediate type. I several cases reactions were either still present or mor evident after twenty-four hours. In 3 a large vesicl surrounded by an erythematous zone developed.

Conjunctival tests with penicillin of the same strengt were performed on most of the patients receiving penicillin skin tests. These were uniformly negative.

COMMENT

One of the interesting findings is the higher incidence of immediate reactions to penicillin in patients with skin diseases than in those with other illnesses. Of the various types of reactions, exacerbation of the skin lesions was most common, occurring in 17 of the 18 reactors. The nature of this reaction is not clear. These patients may manifest this type of response either because they already have skin disease or because their skin is a highly reactive shock organ. More probably the reaction in some of these patients may reflect a fungous infection, either past or present, with subsequent sensitization. The development of an "id" response in several of the patients and the more noticeable reactions in the groin and axillas in patients with a history of fungous infection in these areas would tend to substantiate this. It may be that the exacerbation is not unlike the reactivations occurring at the sites of old healed mycotic lesions following penicillin therapy.[7]

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[7] Lamb, J. H.: Allergic Reactions During the Administration of Penicillin, Arch. Dermat. & Syph. 52:93 (Aug.) 1945.

A clearcut relationship between the antigenic substances common to some of the pathogenic fungi (hyphomycetes)[8] and antigens of Penicillium notatum (ascomycete) has not been demonstrated, but the clinical observations are suggestive. In this series the most severe reactions occurred in patients with fungous infection. It is also significant that the trichophytin skin test was positive in so high a proportion of patients sensitive to penicillin. It may be noted further that in the 2 patients with positive skin tests to penicillin from the nonreactor group the trichophytin skin test was strongly positive. The role of fungous infection or sensitization in the production of these reactions has not been clarified, but sufficient evidence has been presented to warrant further study.

Rashes which appeared within twenty-four hours occurred with equal frequency in the two groups of patients. These are not related to any underlying disease process or previous penicillin therapy. They may be an expression of an idiosyncrasy to the drug, perhaps in the nature of a dermatitis medicamentosa.

There seems to be little doubt that some of the reactions are allergic in nature. This is particularly true of the delayed reactions and of the immediate responses characterized by urticaria, angioneurotic edema and possibly gastrointestinal symptoms. The clinical manifestations are those of an allergic state; the time interval of seven to fourteen days necessary for its development and the immediate response in previously sensitized (treated) patients is characteristic. Moreover, relief by epinephrine and ephedrine is definite. Finally, Criep[3] has demonstrated antibodies by the precipitin test and Prausnitz-Kustner passive transfer reactions.

It is not known whether these reactions are due to the penicillin itself or to an impurity. If the latter, it must be common to the manufacture of many brands, since reactions do not follow a single lot or brand. Sensitization produced by one lot or brand was followed by a reaction on the administration of penicillin from another manufacturer. It is significant, however, that similar reactions have been produced by crystalline penicillin.[9] It is quite possible that the active principle, rather than the impurities, is to blame. The finding of Chow and McKee[10] that crystalline penicillin will combine with human albumin is noteworthy. If the penicillin-albumin complex is antigenic, or if the penicillin component acts as a hapten, it may afford a possible explanation for many of the allergic reactions. It may, at the same time, incriminate the active principle rather than the impurities.

SUMMARY

1. (*a*) The reactions encountered in 124 patients treated with sodium penicillin were studied.

(*b*) Approximately 16 per cent of the total number of patients showed immediate reactions. The incidence of reaction in dermatologic cases was 25 per cent as compared with 6 per cent in nondermatologic cases.

(*c*) Approximately 7 per cent of all patients showed delayed reactions. The incidence was the same in both dermatologic and nondermatologic groups.

2. No significant relationship was found between the incidence of reaction and previous penicillin therapy.

3. (*a*) Penicillin reactions did not recur consistently in all patients subsequently given additional therapy. Some patients reacted consistently; others did not.

(*b*) The time interval between courses of penicillin bore no relationship to the incidence of reactions in the whole group.

(*c*) In a group of consistent reactors, however, it was found that a phase of relative anergy existed for a period of about five to seven days.

4. There was no correlation between a past history of personal and familial allergies, previous skin disease, drug intolerance, previous penicillin therapy or reactions referable to it, and the incidence of reaction. Contact dermatitis followed the local use of penicillin for skin lesions in 4 patients.

5. Skin tests were performed. It was found that 1,000 to 2,000 units per dose (0.1 cc.) was necessary to produce consistent responses. Concomitantly performed trichophytin skin tests showed a high degree of correlation in positive reactors. Conjunctival tests with penicillin were uniformly negative.

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[8] Jadassohn, W.; Schaaf, F., and Wohler, G.: Analysis of Composite Antigens by the Schultz Dale Technic Further Experimental Analysis of Trichophytins, J. Immunol. **32**: 203, 1937.

[9] Welch, Henry, and Rostenberg, Adolph, Jr: Hypersensitivity of the Tuberculin Type to Crystalline Penicillin Sodium, J. A. M. A. **126**: 10 (Sept. 2) 1944. Penicillin,[3] Pyle and Rattner[1]

[10] Chow, B. F., and McKee, Clara M.: Interaction Between Crystalline Penicillin and Human Plasma Proteins, Science **101**: 67 (Jan. 19) 1945.

URINARY INCONTINENCE IN FEMALE FROM ECTOPIC URETERAL ORIFICES

DAVID S. CRISTOL, M.D.
and
LAURENCE F. GREENE, M.D.
Rochester, Minn.

There is no accurate way to estimate the number of women suffering unnecessarily from urinary incontinence. That the urinary incontinence of a considerable number of such unfortunate persons results because the ureteral orifices are anomalously located, most urologists are certain. Urologists are equally certain that a cure awaits those patients once the condition is recognized. The crying needs are first for an awareness of all physicians of the possible cause of the incontinence and then for direction of these patients for treatment. We are presenting some facts which were derived from a review of 19 cases observed at the Mayo Clinic in the hope that, when this condition and its treatment are brought to the attention of physicians, more of these patients will receive proper care. Twelve of these cases have been reported previously by Crenshaw.[1]

The urinary incontinence which results from ectopic ureteral orifices presents a characteristic picture. Most frequently the patients are young women, unmarried and rather retiring. Most often they have interrupted their elementary education and those who have sought jobs usually have not remained employed in one location for any length of time. Many have had few social contacts with members of the opposite sex. Of the few who have married, several have been divorced. For as long as they can remember, they have found it necessary to protect their underclothes from a slow but constant seepage of urine. This annoyance has been present despite the fact that they have a normal desire to urinate and perform that function in a normal manner. These patients usually have sought relief from physicians and charlatans. Many have been told that they cannot be cured, but usually they have arrived at that conclusion themselves. Those who have been told that they will outgrow the condition eagerly look forward to old age. The least fortunate may become psychotic.

From the Section on Urology, Mayo Clinic.

[1] Crenshaw, J. L.: Ureter with Extravesical Orifice; Supernumerary Ureter Ending Blindly; Crossed Ureteral Ectopia; Stones in Extrapelvic Cystocele: Report of Eleven Cases, J Urol **43**: 82-101 (Jan.) 1940.

The awareness and treatment of this condition can secure a cure for persons in this unhappy group is no overstatement. These persons have an anomalous condition of the urinary tract which fortunately lends itself readily to operation and cure. They usually have duplication of the renal pelvis and ureter on one or both sides. The ureter from the upper renal segment empties distal to the external urinary sphincter in the urethra or vestibule of the vagina rather than in the bladder (fig. 1). Thus when the duplication is unilateral, while the bladder normally fills with urine which comes from the lower segment of the kidney in which the duplication occurs together with the urine coming from the kidney on the opposite side, and the patient gets a normal desire to void, still urine constantly seeps from the ectopic ureteral orifice.

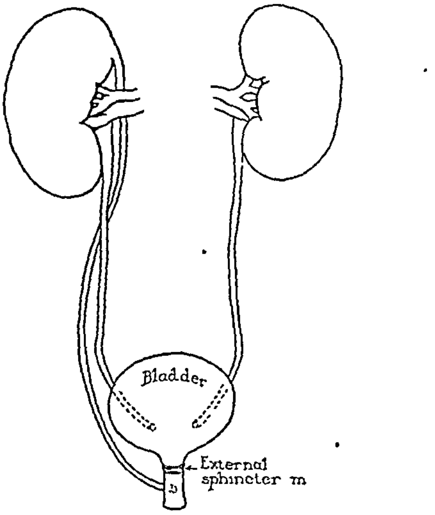

Fig. 1.—Diagrammatic sketch of the ectopic opening of the ureter leading from the upper segment of a duplicated kidney. The ureteral orifice is situated at a point distal to the external sphincter of the bladder

The diagnosis almost always can be made from the history alone. Any girl or woman who has dribbled urine constantly for as long as she can remember despite the fact that she normally has the desire to void and does urinate has an ectopic ureteral orifice or orifices. Further diagnostic evidence is obtained from the excretory urogram, in which duplication of the renal pelvis and ureter may be obvious or suggested.[2] In some cases the excretion of contrast medium by the upper renal segment, which usually is the seat of pyelonephritis, may not be sufficient to cast a shadow in the roentgenogram and hence only the lower renal segment will be visualized. In such a case the presence of duplication may be suggested by study of the size, shape and position of the lower pelvis which will be visualized in the excretory urogram. It will be noted that the upper calix of the lower pelvis, instead of extending superiorly, frequently, but not always, extends laterally and somewhat superiorly (fig. 2). Furthermore, the shadow of the pelvis will appear small as compared with the total renal mass, and considerable renal parenchyma with no pelvic outlet will be noted above the visualized renal pelvis. Although the upper renal segment cannot satisfactorily concentrate opaque medium, it will continue to secrete dilute urine.

Range of Ages of Patients Who Had Ectopic Ureteral Orifices

Age, Years	Cases
6 10	5
11 - 20	5
21 - 30	7
31 - 40	2

Still further confirmation occasionally can be obtained by location of the aberrant ureteral orifice. Too often this is impossible. However, the diagnosis is justified if the following are present: First, there must be the characteristic history, which was described previously, and secondly there should be urographic evidence of duplication of the renal pelvis and ureter with or without visualization of the upper segment. Only rarely will ureteral ectopia of this type be present when the renal pelvis and ureter are not duplicated.

The treatment is surgical and usually consists in heminephrectomy of the upper renal segment and partial ureterectomy. In the cases in which bilateral duplication is present and in which two aberrant ureteral orifices consequently may be present, the upper segments of both kidneys are removed. In such a case after the first heminephrectomy the leakage of urine is reduced but nevertheless persists until the other heminephrectomy is performed.

DATA COLLECTED FROM NINETEEN CASES OF ECTOPIC URETER

All the patients in this series were females, and their ages are given in the table Four patients had interrupted their elementary education. Two gave evidence of severe emotional instability. Of the 4 who had married, 2 were divorced shortly after the marriage. Only 1 patient had borne children. Many of these women had been employed in a succession of localities.

Fig. 2—Retrograde pyelogram. Typical appearance of lower segment of a duplicated kidney.

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[2] Greene, L. F.: Duplication of the Renal Pelvis and Ureter, S. Clin. North America 24: 910 921 (Aug) 1944.

Every patient had dribbled urine since birth despite the fact that she also voided in a normal manner. Two patients also suffered periodic bouts of chills and fever. One patient did not suffer dribbling while recumbent. All the patients found it necessary to wear pads to prevent soiling their underclothes. Most of them had received previous medical examinations, and the usual diagnoses, in the order of their frequency, were weak sphincter, weak bladder, nervousness, urinary infection, behavior problem and vesicovaginal fistula.

In cases in which excretory urograms were made, the duplication was obvious in 8 and was suggested in 6 cases. Duplication was inferred from retrograde pyelographic studies of the lower pelvis in 4 cases; in 1 case duplication was absent. Successful retrograde pyelography of the upper renal segment was performed in 6 cases. The ectopic ureteral orifices were definitely located in 17 and doubtfully located in the other 2 cases. Seventeen patients remained for operation at the clinic. Unilateral heminephrectomy and partial ureterectomy were performed in 9 cases. Six of the operations were performed on the left side and 3 on the right. It was necessary to perform bilateral heminephrectomy and partial ureterectomy in 2 cases. These patients had bilateral duplication, and the ureteral orifices of both upper segments were ectopic. Bilateral duplication was evident in 3 more cases, but the ureteral orifice from only one of the upper renal segments was ectopic in each. The aberrant ureter was ligated in 2 cases; both patients subsequently developed cystic masses in the renal region. The ureter was transplanted into the bladder in 2 cases, and it was necessary to remove the entire kidney and ureter in 2 others. Without exception, all elements of renal and ureteral tissue removed revealed evidence of chronic inflammatory change. Chronic pyelonephritis, hydronephrosis and hydroureter were constant findings.

A careful search for evidence of other anomalies revealed none. Roentgenographic evidence of spina bifida occulta was found in 2 cases, but this can be considered to be coincidental. The mother of 1 patient also had unilateral duplicated kidney, but the orifices were situated normally.

COMMENT

Pleas for the early diagnosis of disease are frequently being made. Often these pleas concern diseases in which only a small percentage of cures is achieved even when the known treatments are given. We hope to stimulate the members of the medical profession to an awareness of this condition, which, when properly treated, can be corrected in every case.

Experimental Embryology of Mind.—A human spermatozoan is a tiny, free, human organism. Its behavior is determined by the manner in which its living protoplasmic system reacts to the chemical, mechanical and other energy relationships of its environment. It may be said that the movements of the sperm are chemotactic or rheotactic. When such a proper motile and mechanistically determined sperm fertilizes a proper human ovum in a suitable environment, processes start which sometimes lead to the development of a new and infinitely complex, but again freely moving, human organism. Certain of these organisms, so developed, at definite stages in their lives perceive, have emotions, reason, talk, build airplanes and tanks, and bomb other similarly constructed human organisms.—Carmichael, Leonard: The Experimental Embryology of Mind, in Twentieth Century Psychology, New York, Philosophical Library, 1946.

MELIOIDOSIS ON GUAM

LIEUTENANT COMMANDER GEORGE S. MIRICK, MC(S), U.S.N.R.
LIEUTENANT COMMANDER HARRY M. ZIMMERMAN, MC(S), U.S.N.R.
COMMANDER GEORGE D. MANER, MC(S), U.S.N.R.
and
COMMANDER ARTHUR A. HUMPHREY, MC(S), U.S.N.R.

During the months of July and August 1945, 2 fatal cases of melioidosis[1] were encountered in military personnel on the island of Guam. The diagnosis in each instance was made by postmortem examination and by the isolation of Pfeifferella whitmori from the pathologic lesions observed. This micro-organism is similar in many respects to Pfeifferella mallei, the causative agent of glanders, and the lesions of the two conditions are similar. The findings in the 2 cases of melioidosis reported here are thought to be of importance because of the recognized high mortality attending human infection with P. whitmori and because of the apparent rarity of the disease in the past.

Up to 1933 only 95 cases of this disease in man had been described in the literature,[2] with a mortality of 95 per cent. Thirty-eight of these cases were reported from Burma, 39 from the Federated Malay States, 10 from Indo-China, 1 from Ceylon and 7 from Siam or the Dutch East Indies. It is believed that the 2 cases described in the present communication are the first to have been recognized on Guam or any other of the islands of Micronesia, Polynesia or Melanesia. The clinical, pathologic and bacteriologic findings concerning these 2 patients are described.

REPORT OF CASES

CASE 1.—*History.*—F. S., CPhM, U. S. Navy, had been stationed continuously on Guam for about six months before onset. No history was obtained from the patient of exposure to rats or any other animals known to be infected. He first became sick on July 13, 1945 with the symptoms of chills and fever, headache, burning eyes and slight cough. On admission to Base Hospital number 18 on July 14 his temperature was 102.2 F. and, following a shaking chill, rose to 104 F. Physical examination at that time showed no abnormal findings except those of a prostrated man just recovering from a shaking chill The urine contained some albumin but was otherwise normal. There were 12,500 leukocytes per cubic millimeter of blood On the following day there were 10,000 leukocytes per cubic millimeter of blood, with 72 per cent polymorphonuclear neutrophils, of which 2 per cent were juvenile forms, 32 per cent banded forms and 40 per cent segmented forms; lymphocytes comprised 25 per cent and monocytes 1 per cent of the total number of leukocytes. No malarial parasites were found. The sputum was clear and frothy, and a film stained by Gram's method showed no micro-organisms of recognized pathogenicity. The patient experienced daily shaking chills, the temperature swinging between 100.5 and 105. F. but usually remaining above 103 F. The pulse was rapid, varying between 100 and 120 per minute. Respirations varied between 24 and 32 per minute. On July 17, the fifth day of illness, the patient developed

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From the U. S. Naval Medical Research Unit 2, Guam, Marianas Islands.

Commander Maner is pathologist, U. S. Naval Base Hospital number 18.

Commander Humphrey is pathologist, U. S. Naval Fleet Hospital number 115.

Valuable technical assistance was given by Alva R Huckins, Chief Pharmacists' Mate, U S N.R.

This article has been released for publication by the Division of Publications of the Bureau of Medicine and Surgery of the U. S. Navy The opinions and views set forth in this article are those of the writers and are not to be considered as reflecting the policies of the Navy Department.

[1] Whitmore, A.: Brit. M. J 2:1306, 1912; J. Hyg. 13:1, 1913. Stanton, A. T., and Fletcher, William: Melioidosis, Studies Institute Medical Research Federated Malay States, no 21, 1932.

[2] Couture, E.: La melioidose, Rev. d'hyg. 57:190 (March) 1935.

hiccups and became cyanotic. Rales became apparent at this time at the base of the left lung. A roentgenogram of the chest showed "irregular small nodular infiltration scattered throughout both lung fields, especially the lower halves—no evidence of confluence or pleural reaction." On July 18 the patient's condition deteriorated rapidly and he died. A total of 200,000 units of *penicillin* was given by intramuscular injection during the last five days of life without apparent benefit.

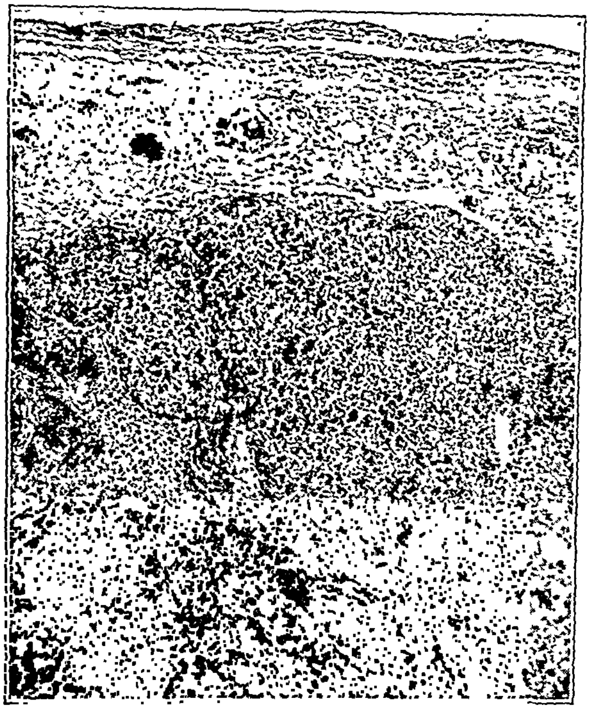

Fig. 1 (case 1).—Miliary abscess beneath relatively intact pleura. *All photomicrographs are at a magnification of 120 diameters and were made of microscopic preparations stained with hematoxylin and eosin.*

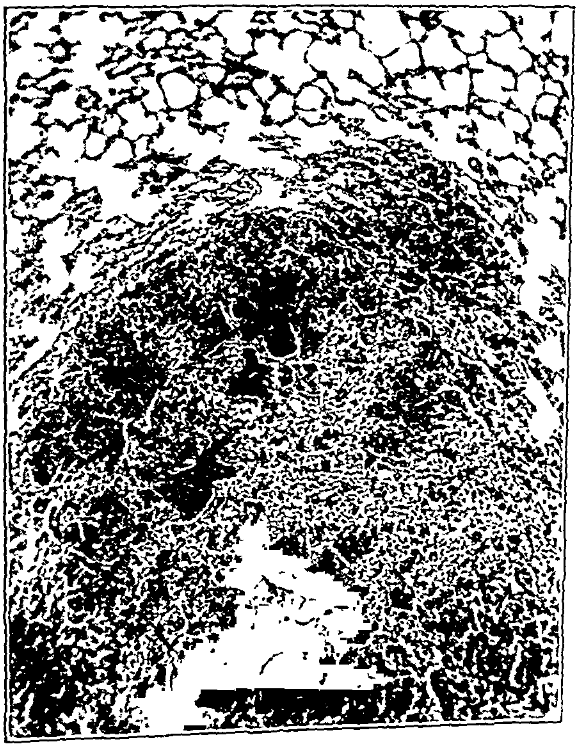

Fig. 2 (guinea pig 1).—Focal pulmonary abscesses with intervening organizing pneumonitis.

Pathologic Examination.—At necropsy the patient was *found* to have multiple small (*2 to 10 mm.*) gray, sharply defined abscesses, which had granulomatous margins and were filled with caseous pus. These abscesses were found throughout the lung, liver, spleen and kidneys and *in the mesenteric celiac* and cervical lymph nodes.

The histopathologic changes encountered in the different organs of the body were remarkably uniform, and a description of them in one organ suffices for all. The pulmonary lesions consisted of widely distributed miliary abscesses, often lying discretely beneath the pleura (*fig. 1*) *or more deeply in the* lung parenchyma and sometimes coalescing into large zones of suppuration. The intervening pulmonary tissue was the seat of an ordinary acute pneumonitis, *with* fibrin and neutrophilic leukocytes as the chief components of the exudate. Where the abscesses broke into the bronchioles the latter had their *mucosal epithelium desquamated and their lumens filled with* purulent material. The larger bronchi, and even *the trachea,* were partially ulcerated, and suppuration replaced parts of the mucosa and submucosa.

The *distinctive feature of the pulmonary infection, as it* was of the other viscera involved, was the granulomatous nature of the lesion. Except for the most acute miliary abscesses, the usual focus of infection had a definite wall of fibrin either partially or extensively organized (*figs. 3* and *4*) The "core" of the lesions was composed of *either liquefactive, coagulative* or caseous necrosis, sometimes one and sometimes another. These small granulomas were reminiscent of tubercles or of the lesions in glanders or tularemia, depending *on the type* of necrosis *and the* amount of organization by granulation tissue. *In the lungs,* where the pathologic process was most extensive, it had a certain resemblance to changes caused *by* actinomycosis

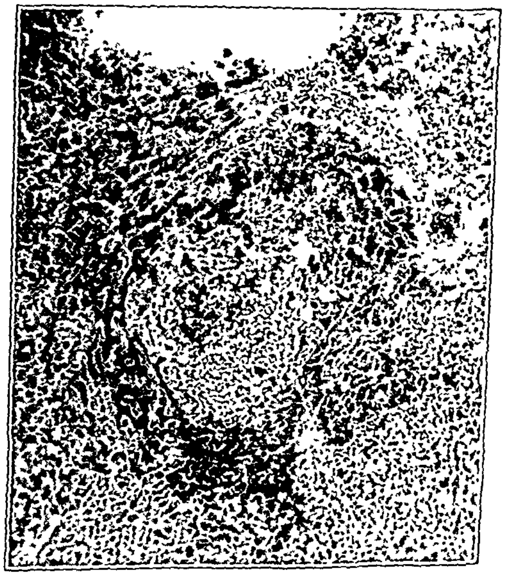

Fig. 3 (case 1)—Focal hepatic abscess. Note leukocytes in liver sinusoids.

Bacteriologic Examination.—Cultures were made from the lung; the predominant micro-organism was identified as Pfeifferella whitmori[1] by the following characteristics: It grew readily under aerobic conditions on all the usual culture *mediums, including* Koser's citrate medium. On nutrient agar containing 6 per cent human blood the colonies were round, low convex, translucent and grayish. The freshly isolated *strain produced* slight hemolysis after growth for twenty-four hours at 37 C.; this characteristic was not apparent on subculture. After growth for three days the colonies appeared grayish yellow. When grown for three days on tryptose phosphate agar (Bacto) a characteristic rough phase was observed. The bacterium grew readily in *broth, with the* formation of a pellicle. It was an actively motile, pleomorphic rod which was gram negative and showed characteristic bipolar staining. A small amount of acid but no gas was *formed* from the following sugars: glucose and galactose in two days, lactose, mannitol, xylose, maltose, sorbitol and *adonitol in* six days and sucrose in nine days; rhamnose, dulcitol and trehalose were not acidified in ten days. Gelatin showed stratified liquefaction to a depth of about 1 cm. below the surface after growth for three days at 22 C. The methyl red test and tests for the formation of hydrogen sulfide and indole were negative. Ammonia was produced from peptone. Nitrates were reduced actively to nitrites. Methylene blue was reduced, and catalase was produced.

Animal Inoculation.—An adult male guinea pig was injected intraperitoneally with 0.5 cc. of a 1 : 10,000 dilution of a twenty-four hour broth culture of this strain of P. whitmori in the rough phase. On the fourth day after inoculation the pig developed a typical Strauss reaction. The temperature became elevated to 105.4 F., and he refused to eat. He became progressively more wasted and on the ninth day developed diarrhea and a purulent discharge from the eyes. On this day the guinea pig was killed. At autopsy several sharply defined, slightly elevated firm gray areas 2 to 10 mm. in diameter were found on the lower surface of the liver and in the cortical substance of both kidneys. There were gray patches of consolidation in both the right and the left lung, particularly the lower lobes. The testes were enlarged, and there was a mass of caseous material surrounding both testes and seminal vesicles.

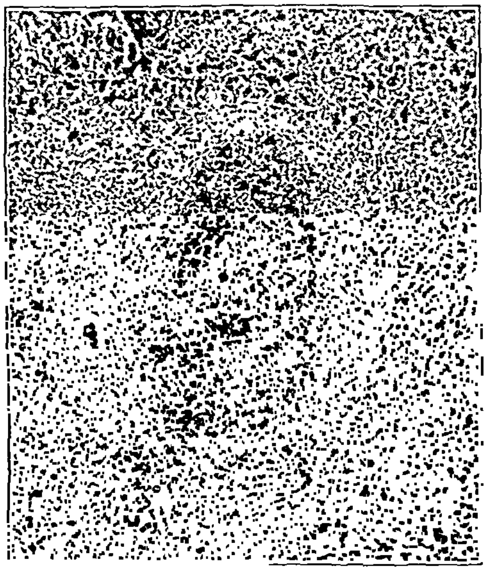

Fig. 4 (case 1).—Granuloma-like lesion in liver. Fibrosis on periphery of inflammatory response.

A film of this material when stained by Gram's method showed many polymorphonuclear leukocytes and large numbers of intracellular and extracellular bipolar gram negative rods, characteristic of *Pfeifferella whitmori*; a pure culture of the micro-organism in the smooth phase was recovered from the caseous material.

The histopathologic changes in this guinea pig are described later, with those found in the guinea pig injected with the strain of P. whitmori isolated from case 2.

Case 2.—*History.*—A. W. H., Pfc., U.S.M.C.R., arrived on Guam on Feb. 28, 1945 and was stationed with the 10th 155 mm. Gun Battalion of the 5th A. C. Many rats were present in the camp area, and the patient kept food in his tent in such a manner that it could have become contaminated by infected rats. There was no known direct exposure to any infected animals. He first became sick on August 2 with the symptoms of fever (103 to 105 F.), chilly sensations but no frank chill, headache, dull aching pain in the right lower quadrant of the abdomen and mild dyspnea. Physical examination was negative. The leukocyte count showed 8,500 cells per cubic millimeter of blood, with a normal distribution of types. The urine was normal. He was admitted to Fleet Hospital number 115 five days later, on August 7, and at that time had a temperature of 105.8 F., pulse rate 124 and respiratory rate 25. Physical examination was negative except for a hot dry skin, coated tongue and increased resistance and tenderness in the right lower quadrant of the abdomen. The lungs seemed normal at that time. There were 11,000 leukocytes per cubic millimeter of blood, with 75 per cent polymorphonuclear neutrophils, 3 per cent being banded and 72 per cent segmented forms, 3 per cent eosinophils, 18 per cent lymphocytes and 3 per cent monocytes. No malarial parasites were found. A culture of the patient's blood taken at that time was found three days later to contain a bacterium subsequently identified as P. whitmori. On August 8, the seventh day of illness, the patient's condition became worse, with the fever remaining high, pulse rate 150 per minute and shallow respirations of 32 per minute. Diarrhea with stools resembling pea soup became apparent. At that time the spleen was palpable and rales were noticed in the lungs. A roentgenogram of the chest showed diffuse bronchopneumonia. Treatment with penicillin was commenced, but the patient failed rapidly and died that evening, apparently of respiratory failure.

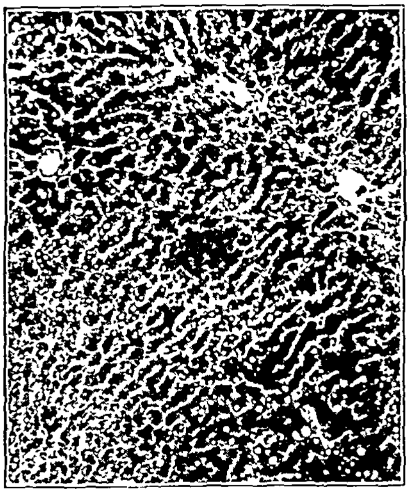

Fig. 5 (guinea pig 1).—Exceedingly small abscess in liver.

Pathologic Examination.—At necropsy there were found multiple small (1 to 5 mm.) abscesses which had definite walls and contained white pus. These were scattered over the surface (a few were deeply situated) of the liver, spleen, both kidneys and both lungs. In addition there was evidence of hypertrophic ileitis.

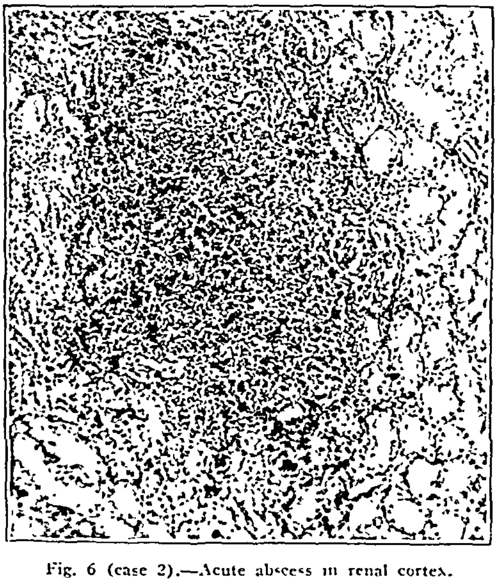

Fig. 6 (case 2).—Acute abscess in renal cortex.

The anatomic changes in the different viscera were strikingly similar; in addition, they were practically indistinguishable from those found in the first case. Acute miliary abscesses (fig. 6) as well as more chronic, tubercle-like granulomas were present in the lungs, liver, kidneys and spleen. In the ileum, where hypertrophic changes were in evidence, the mucosa was found to be free from ulceration. In the submucosa, however, there was an extensive lymphocytic and monocytic infiltration. The germinal follicles were numerous and large, and they displayed excessive cellular division.

Bacteriologic Examination.—A culture obtained from a liver abscess at the time of autopsy was subsequently identified as P. whitmori in the smooth phase. This strain was identical in almost all respects to that previously isolated in the first case and described in detail. Acid was formed from the same sugars and at approximately the same times, with the single exception of arabinose, which was not fermented in ten days by this strain. Moreover, all the other cultural and biochemical reactions which have been described were identical. Both rough and smooth phases of the micro-organism could be distinguished on plate cultures.

Animal Inoculation.—An adult male guinea pig was injected intraperitoneally with 0.5 cc. of a 1 : 10,000 dilution of a twenty-four hour broth culture of a smooth variant of this strain. A Strauss reaction developed on the second day after inoculation and the pig became febrile. It died on the sixth day after inoculation. At autopsy there were observed small (1 to 3 mm.), slightly elevated, firm, sharply defined, nodular abscesses on the surface of the liver and in the mesenteric lymph nodes. The lungs showed patchy gray areas of consolidation, particularly in the lower lobes. The spleen was enlarged, but neither the spleen nor the kidneys showed gross abscesses. Surrounding the testes were masses of gray caseous pus. A film of this material stained by Gram's method showed many polymorphonuclear leukocytes and many gram-negative bacilli with the characteristics of P. whitmori. The micro-organism was cultured from this material as well as from the lungs.

This guinea pig and the pig which was injected with the strain of P. whitmori isolated from the first case had similar histopathologic lesions. In most respects these lesions were also similar to those seen in the cases in man. The pulmonary changes (fig. 2) were much the same; there were focal abscesses with intervening organizing pneumonitis. The genesis of the suppurative lesions could be followed in almost any viscus, where were present the earliest miliary abscesses (fig. 5) as well as the most advanced, almost completely fibrosed granulomas (fig. 7). Of especial interest was the inflammatory response in the tunica vaginalis of the testis (fig. 8). There was much caseation here without either giant or epithelioid cell reaction. An extensive granulation tissue response occurred around some foci of coagulative necrosis, producing the picture of a nonspecific granuloma.

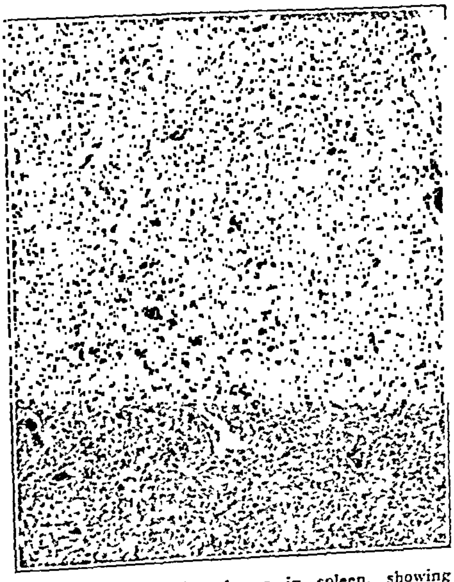
Fig. 7 (guinea pig 2).—Granulomas in spleen, showing advanced fibrosis.

COMMENT

The disease melioidosis affects not only human beings, but in Malaya, the Dutch East Indies and Ceylon it is known to attack animals, including rabbits, rats, cats, dogs and rarely horses. The disease may be given to susceptible animals by rubbing the causative organism on the intact skin as well as by the feeding or injection of infectious material. The infection in human beings is thought to occur usually through the ingestion of infected food or water. Blanc and Baltazard[3] have shown that the rat flea can harbor and allow the multiplication of P. whitmori They have also shown[4] that the mosquito Aedes egypti can become infected and transmit the disease by its bite, and they suggest that many arthropods may be capable of transmitting the infection.

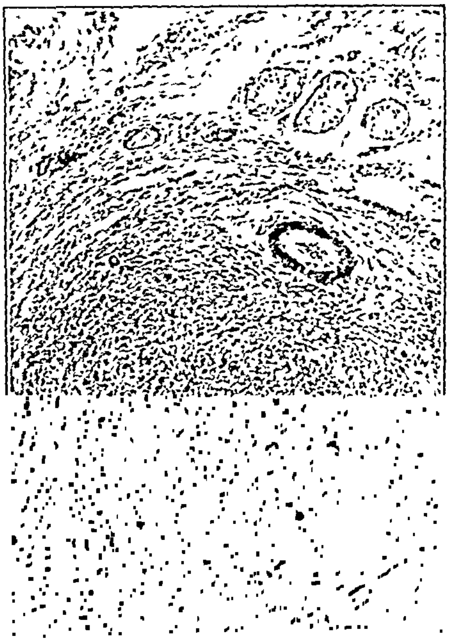
Fig. 8 (guinea pig 1).—Organizing abscess in tunica vaginalis.

There seems to be little doubt that the patients who are the subject of this report contracted melioidosis on Guam. The reservoir of infection on the island is at present unknown but is presumably one or both of the two species of rats (Rattus rattus and *Rattus exulans*) which infest the island. The possibility of infected dogs and cats must also be considered.

Melioidosis in human beings[2] usually takes the form, described in this report, of an acute or subacute septicemia with death resulting in three days to four weeks. A rare chronic form of the disease is also recognized in which large, sluggish abscesses may occur in any organ of the body and death is delayed for months or even years. No treatment for the disease has been known up to this time, but recently Grant and Barwell[5] have described a chronic case which was treated with various sulfonamide drugs, with indications of some clinical improvement.

Experiments in our laboratory showed that neither strain of P. whitmori isolated was inhibited in vitro by large amounts (35 units per cubic centimeter) of penicillin. However, both of our strains are quite susceptible in vitro to the bacteriostatic action of sulfadiazine. In tryptose phosphate broth (Bacto) the growth of an inoculum of about 1,000 cells was completely inhibited at eighteen hours at 37 C. by sodium sulfadiazine in a concentration of 15 micrograms per cubic centimeter of medium. This compares favorably with the susceptibility of pneumococci. Therefore it would seem appropriate that therapy with sulfadiazine or one of the allied sulfonamides be attempted in subsequent patients who are suspected of having melioidosis.

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[3] Blanc, G., and Baltazard, M.: Transmission of P. Whitmori by Rat Flea, Prev. Med. 49:1293 (Dec.) 1941.

[4] Blanc, G., and Baltazard, M.: Prev. Med. 50:33 (Jan. 7) 1942. Compt. rend. Acad. d. sc. 213:670, 1941.

[5] Grant, A., and Barwell, C.: Chronic Melioidosis: A Case Diagnosed in England, Lancet 1:199 (Feb. 13) 1943.

SUMMARY

The clinical, pathologic and bacteriologic findings in 2 fatal cases of melioidosis contracted on Guam were obtained. Studies in vitro showed that the two strains of the causative bacterium, Pfeifferella whitmori, isolated from the patients were not susceptible to the bacteriostatic action of penicillin but were very sensitive to sulfadiazine. These findings justify the clinical trial of the sulfonamide drugs in the treatment of this highly fatal disease.

ALKALIZATION OF URINE DURING SULFONAMIDE THERAPY

OTTO J. PENNA, M.D.
Resident in Surgery, Evanston Hospital

and

FREDERICK CHRISTOPHER, M.D.
Associate Professor of Surgery, Northwestern University Medical School; Chief Surgeon, Evanston Hospital

Evanston, Ill.

It has been known for some time that irreparable damage may be done to the kidneys by the crystallization of sulfonamides in the urine. Gilligan and his associates[1] and many others have shown the importance of adjuvant alkali therapy in the prevention of renal complications. Sulfonamides as well as acute infectious disease processes have an acidifying effect on the urine. Gilligan showed that 27 per cent of the total amount of sulfadiazine administered was crystallized in acid urine with a p_H of 5 to 6. Solubility of the crystals was twenty to thirty times greater when the p_H was 7.5 than when it was 5.0. Hence crystalluria can be reduced to a minimum if the urine is kept neutral or alkaline and if an adequate daily urinary excretion is maintained.[2] Schwartz and his associates[3] demonstrated that sulfadiazine produces less crystalluria than sulfathiazole (67.8 per cent of their patients who were given sulfathiazole without alkalization showed crystalluria, whereas only 25.3 per cent of those receiving sulfadiazine showed crystals). About one third of the sulfadiazine administered appears in the urine as the acetylated compound.[4] The solubility of sulfadiazine and of acetylsulfadiazine is more than doubled by increasing the p_H of a solution from 7 to 7.5.[5] Both sodium bicarbonate (12 to 22 Gm. daily) by mouth[6] and sodium r-lactate intravenously[7] have proved effective in keeping the urine sufficiently alkaline for prevention of sulfonamide crystalluria. Gilligan recommends 550 cc. of sixth molar sodium r-lactate twice daily. He considers this the equivalent of 15.4 Gm. of sodium bicarbonate orally. With a daily dosage of 1,100 cc. of sodium lactate, only 16 of 280 specimens collected from patients on sulfadiazine therapy showed crystalluria, and later specimens were clear after the administration of further alkali. The p_H value ranged from 7.0 to 8.5, and the urine remained alkaline for twenty-four to thirty-six hours after discontinuance of the alkali.

When oral administration of alkalis is impossible, parenteral alkalization of the urine is mandatory. Infectious conditions which are benefited by the sulfonamides often necessitate the maintenance of high levels of sulfonamide in the blood and rapid alkalization of the urine. To achieve this alkalization the intravenous route is preferable to the oral. Owing to faulty supervision of the administration of the sulfonamides, many cases of anuria have been caused by crystalluria. Such a condition is a true emergency, and part of the treatment consists in rapid alkalization of the urine.

Although sodium r-lactate has proved effective in alkalizing urine,[7] at least 1,000 cc. of the solution is needed each twenty-four hours. An effective alkali of less volume is preferable in certain cases in which there is need to restrict the fluid intake and yet supply an adequate amount of amino acids and glucose parenterally. Fifteen Gm. of sodium bicarbonate can be given in 200 cc. intravenously. It is evident that sodium bicarbonate administered intravenously is more effective than an equal amount given orally.

Only until rather recently have sterile solutions of sodium bicarbonate (free from sodium carbonate) been available for intravenous use. An ampule with 3.75 Gm. of sterile sodium bicarbonate in 50 cc. of water may be obtained commercially.[8] The p_H of this solution is 7.7; rarely the p_H is 8.0. (The normal p_H of blood is 7.5.) One liter of sixth molar sodium r-lactate has 3.82 Gm. of sodium. Fifteen Gm. of sodium bicarbonate in 200 cc. of water contains 4.08 Gm. of sodium.

Our purpose in the present study has been to determine the value of intravenous administration of sodium bicarbonate for alkalizing the urine.

PROCEDURE

A group of 12 uncomplicated postoperative cases were used to test the effectiveness of intravenous administration of sodium bicarbonate during sulfadiazine therapy. The patients were all physically fit males, ranging in age from 18 to 40 years, and had been hospitalized for either herniorrhaphy or excision of a pilonidal cyst.

Group 1 consisted of 6 patients who were given 6 Gm. of sulfadiazine orally each day for five days (2 Gm. initially and then 1 Gm. every four hours). These patients were given 3.75 Gm. of sodium bicarbonate in 50 cc. of water intravenously at 8 a. m. and 8 p. m. This regimen was started on the first postoperative day. The daily fluid intake was kept near 2,500 cc. All urinary specimens were tested before, during and after this five day period. Urinalysis, blood counts and determinations of the blood level of sulfadiazine and of the carbon dioxide combining power were made every second or third day. All patients were ambulatory by the third postoperative day. The 6 patients in group 2 were kept on the same routine except that they were given 7.5 Gm. of sodium bicarbonate in 100 cc. of water intravenously twice daily. Group 3 consisted of 2 patients who were closely studied to determine the rapidity with which the urine could be made alkaline. Nitrazine paper with a p_H range of 4.5 to 7.5 was used in testing all urinary specimens.

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[1] Gilligan, D. R.; Garb, S.; Wheeler, C., and Plummer, N.: Adjuvant Alkali Therapy in Prevention of Renal Complications from Sulfadiazine, J. A. M. A. **122**: 1160 (Aug. 21) 1943.

[2] Gilligan, D. R.; Garb, S., and Plummer, N.: Prevention of Crystalluria During Sulfadiazine Therapy, Proc. Soc. Exper. Biol. & Med. **52**: 248, 1943.

[3] Schwartz, L.; Flippin, H. F.; Reinhold, J. G., and Domm, A. H.: The Effect of Alkali on Crystalluria from Sulfathiazole and Sulfadiazine, J. A. M. A. **117**: 514 (Aug. 16) 1941.

[4] Sadusk, J. F., Jr., and Tredway, J. B.: Observations on Absorption, Excretion, Diffusion and Acetylation of Sulfadiazine in Man, Yale J. Biol. & Med. **13**: 539, 1941.

[5] Griep, A. H.: Note on Alkalinization During Sulfonamide Therapy, Univ. Hosp. Bull., Ann Arbor **10**: 44, 1944.

[6] Rohr, J. H., and Christopher, F.: Administration of Alkalis in Sulfadiazine Therapy, Surg., Gynec. & Obst. **78**: 515, 1944. Gilligan, Garb, Wheeler and Plummer.[1] Griep.[5]

[7] Gilligan, D. R.; Dingwall, J. A., and McDermott, W.: Parenteral Use of Sodium Lactate Solution in Prevention of Renal Complications from Parenterally Administered Sodium Sulfadiazine, Ann. Int. Med. **20**: 604, 1944. Rohr and Christopher.[6]

[8] Abbott Laboratories.

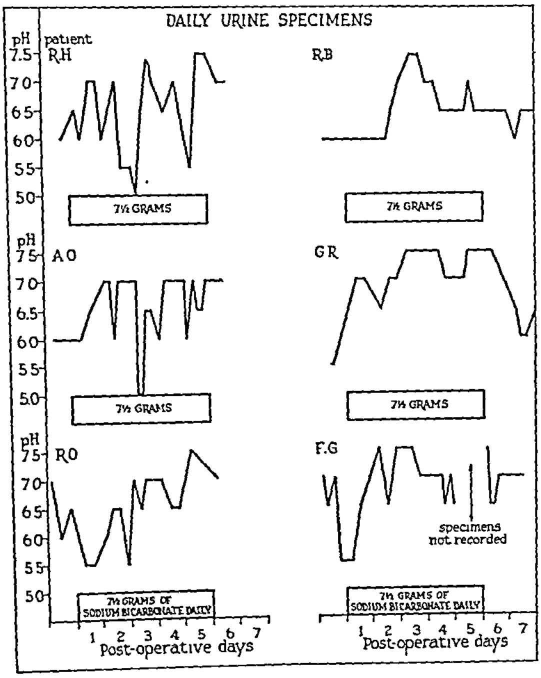


Chart 1.—Urinary specimens in group 1.

RESULTS

Group 1.—The 6 patients in this group received intravenously 3.75 Gm. of sodium bicarbonate in 50 cc. of water twice daily plus sulfadiazine orally. Microscopic urinalysis was done on the second and fourth days. Three patients were tested on the fifth day also. Morning specimens were used throughout for analyses. Two patients showed crystalluria. One patient (R. B.) showed many sulfadiazine crystals per high power field on the second day and a few crystals on the fifth day. The p_H of the urine varied from 6.0 to 7.5 during the five day period. The sulfadiazine level of the blood reached a high of 14.2 mg. per hundred cubic centimeters. Urinalysis was negative two days after the sulfadiazine was discontinued. Another patient (R. H.) had a few crystals per high power field on the fifth day. At that time the sulfadiazine level of the blood was 12.2 mg. per hundred cubic centimeters. Only 1 patient complained of any subjective symptoms; he noted tingling and numbness in the lower lip immediately after the injection of sodium bicarbonate. All determinations of the carbon dioxide combining power (done on the second and fifth days) were within normal limits, ranging from a low of 53 to a high of 63 volumes per cent. A total of 114 specimens of urine were collected from these 6 patients during the five day period. The p_H results are given in table 1. Chart 1 shows the p_H of the urinary specimens before, during and after the five day period of administration of sulfadiazine orally and of sodium bicarbonate intravenously (7.5 Gm. daily in 100 cc. of water).

Table 1.—*Results in Group 1*

p_H	Number of Specimens
4.5	0
5.0	3
5.5	7
6.0	13
6.5	27
7.0	41
7.5	23

Group 2.—A second group of 6 patients received 6 Gm. of sulfadiazine orally and 15 Gm. of sodium bicarbonate in 200 cc. of water intravenously each day. The same routine was followed as for group 1.

Table 2.—*Results in Group 2*

p_H	Number of Specimens
4.5	0
5.0	0
5.5	0
6.0	4
6.5	8
7.0	23
7.5	57

None of these patients showed crystalluria during the five day period. Morning specimens were examined microscopically every second day. The sulfadiazine level of the blood ranged from 6.6 to 8.9 mg. per hundred cubic centimeters. All determinations of the carbon dioxide combining power of the blood were between 48 and 61 volumes per cent. One patient had fever, but this disappeared after the sulfadiazine was stopped.

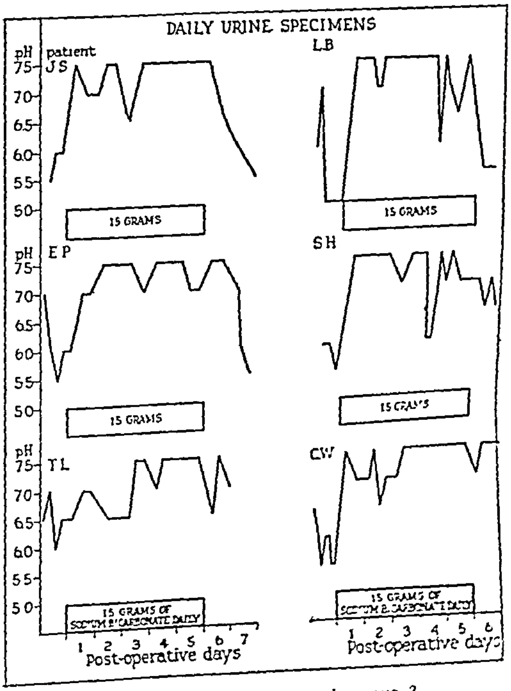


Chart 2.—Urinary specimens in group 2.

No infectious condition could be detected to explain this fever; the patient had no subjective complaints. In this group also 1 patient said that he noticed a temporary numbness in his lips immediately after 7.5 Gm. of sodium bicarbonate was injected. These injections were given over a three to five minute period. The p_H of 92 specimens tested varied from 6.0 to 7.5, as shown in table 2. The p_H of the urinary specimens in all these cases stayed at 6.5 or higher for at least twenty-four hours after the last injection of sodium bicarbonate. Chart 2 shows the p_H curve of the urinary specimens in this group.

Group 3.—This group consisted of 2 patients who were healthy young men. They were studied with regard to the rapidity with which the urine could be made alkaline. The first patient (R. H.) was told to void completely, and the p_H of the urine tested 6.0. He then drank 500 cc. of water, and 3.75 Gm. of sodium bicarbonate in 50 cc. of water was injected intravenously. Thirteen minutes later a voided specimen had a p_H of 6.5; thirty minutes later the p_H was 7.5. The initial specimen of the second patient (F. S.) tested 6.5. Then 7.5 Gm. of sodium bicarbonate in 100 cc. of water was injected intravenously. He complained of mild dizziness and dryness of the mouth that lasted for five minutes. Fifteen minutes after the alkali was given the urinary p_H was a strong 7.5 (maximum on the indicator scale).

SUMMARY

The effectiveness of intravenous administration of sodium bicarbonate in alkalization of urine during sulfadiazine therapy was tested. Six patients were given 3.75 Gm. of sodium bicarbonate in 50 cc. of water intravenously twice daily, and 6 were given 7.5 Gm. in 100 cc. of water twice daily. All patients received 6 Gm. of sulfadiazine daily. Specimens of urine were checked for p_H and crystalluria. Three of 15 specimens from patients in group 1 showed asymptomatic crystalluria. One hundred and fourteen specimens from patients who each received a total of 7.5 Gm. of sodium bicarbonate daily had a p_H range of 5.0 to 7.5. Fifty of these were acid. From patients receiving 15 Gm. of sodium bicarbonate daily (group 2) none of the 92 specimens studied showed crystalluria. The p_H ranged from 6.0 to 7.5. Only 12 specimens were acid. Two patients complained of numbness in the lips following injection of the alkali. All values for carbon dioxide combining power were well within normal limits. Two patients were studied with regard to the rapidity with which the urine could be made alkaline. One patient had a p_H change from 6.0 to 7.0 thirty minutes after he was given 3.75 Gm. of sodium bicarbonate in 50 cc. of water intravenously. A second patient was given 7.5 Gm. in 100 cc. of water intravenously, and his urine changed from a p_H of 6.5 to 7.5 in fifteen minutes.

CONCLUSIONS

1. Adults can be given sterile solutions of 7.5 Gm. of sodium bicarbonate in 100 cc. of water intravenously without ill effect.
2. Fifteen Gm. of sodium bicarbonate daily (given intravenously in two doses each of 7.5 Gm. in 100 cc. of water twelve hours apart) will keep the urine sufficiently alkaline to prevent sulfadiazine crystalluria in the average adult.
3. If 7.5 per cent solution of sodium bicarbonate is given intravenously, the same degree of alkalization can be obtained with one-fifth the volume of solution as is necessary when sixth molar sodium r-lactate is used.
4. The urine can be made alkaline within thirty minutes by intravenous injection of 7.5 Gm. of sodium bicarbonate in 100 cc. of water.
5. Intravenous administration of sodium bicarbonate solution should be helpful when it is desirable to build up a high level of sulfadiazine in the blood rapidly and simultaneously to render the urine alkaline.

ACTIVITY OF A NEW ANTIMALARIAL AGENT, CHLOROQUINE (SN 7618)

Statement Approved by the Board for Coordination of Malarial Studies

R. F. Loeb, M D, New York, Chairman; W. M. Clark, Ph D, Baltimore, Chairman, Panel on Biochemistry; G R. Coatney, Ph D, Bethesda, Md, U. S Public Health Service; Captain L. T. Coggeshall (MC), U S N R; Colonel F. R Dieuaide, M C, A. U. S; A. R Dochez, M D, New York, Office of Scientific Research and Development, Captain E G Hakansson (MC), U S N, E. K. Marshall Jr, M D, Baltimore, Chairman, Panel on Pharmacology, C S Marvel, Ph D, Urbana, Ill, Chairman, Panel on Synthesis; Lieutenant Colonel O R. McCoy, M. C, A U. S; Captain James J Sapero (MC), U S N; W. H Sebrell, M D, Bethesda, Md, U S. Public Health Service; J. A Shannon, M D, New York, Chairman, Panel on Clinical Testing, and G A. Carden.Jr., M D, Washington, D. C, Executive Secretary

An intensive exploration of the effects of SN 7618 on animals and man has been in progress during the past two years. This has included an evaluation of the activity of this compound in avian infections, a study of the pharmacology and toxicology in animals and man and finally of its potentialities as an antimalarial against vivax and falciparum infections in man. Included in the latter category are:

1. Extensive studies on its prophylactic activity against domestic and Southwest Pacific strains of vivax malaria, on its curative activity against sporozoite-induced infections when administered alone and in combination with other compounds, and its suppressive activity
2. Extensive investigations in service installations of the potentialities of this drug for use in the termination of the acute attack and in the suppression of the disease.

The pharmacology of SN 7618 has been examined in fairly extensive experiments with mice, rats, dogs, monkeys and man. Most of these studies have been made in comparison with quinacrine.

The following is a brief outline of the pertinent conclusions drawn from the overall investigation by various laboratories screening potential antimalarials in avian infections, studying the pharmacology and toxicology of potential antimalarials, various clinical units examining in man the prophylactic, suppressive and curative effects of potential antimalarials, and by the Army and Navy.

The investigations of the various laboratories and clinical units were sponsored by the Committee on Medical Research of the Office of Scientific Research and Development.

ABSORPTION, EXCRETION, TISSUE DISTRIBUTION AND DEGRADATION

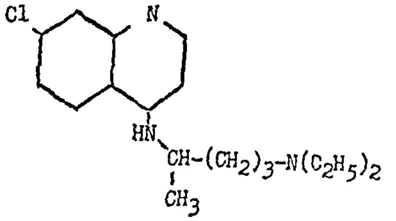
The absorption of SN 7618 from the gastrointestinal tract, like that of quinacrine, is complete or nearly complete. SN 7618 is absorbed somewhat more rapidly than quinacrine and, because of lesser localization, is present in substantially higher concentrations than quinacrine on any given dosage schedule. Excretion of SN 7618 is slow but is slightly more rapid than that of quinacrine. The urinary output of SN 7618 may be increased by acidification of the urine and decreased by alkalization.

Considerable amounts of SN 7618 are deposited in the organs and tissues, the quantities being proportional to the dose of drug. SN 7618 is concentrated in nucleated cells, especially those of the liver, spleen, kidneys and lung. These organs contain the highest concentrations, from 200 to 500 times the amount in plasma. The drug is also concentrated to a considerable extent in leukocytes. Brain and spinal cord contain the lowest concentration, no more than 10 to 25 times the amount in plasma. Thus, the general pattern of distribution of SN 7618 is similar to that of quinacrine.

SN 7618, like quinacrine, is metabolized in the body, only a small part of the drug administered being found in the excreta. Ten to 20 per cent is excreted unchanged in the urine and, as noted, the latter fraction can be increased by acidification of the urine. The definite localization of SN 7618 in the organs with the slow rate of excretion and degradation necessitates the administration of a priming dose if the desired concentration of drug in the plasma is to be rapidly reached and maintained. As in the case of quinacrine, these factors result in a slow disappearance of SN 7618 from the body when the dosage is discontinued; the concentration of the drug in the body fluids generally falls about 60 per cent per week when drug administration is stopped.

TOXICITY

There is little difference in the toxicity of SN 7618 and that of quinacrine in experimental animals. The acute oral toxicity of SN 7618 is about the same as that of quinacrine in the rat and monkey. The acute intravenous toxicity of SN 7618 is greater than that of quinacrine in the dog. Short-term chronic toxicity tests in the mouse show that the two drugs are about equally toxic. In such tests carried out in the rat and monkey for periods not exceeding thirty days SN 7618 is slightly more toxic than quinacrine. In longer term studies with the rat and monkey extending up to one hundred and twenty days the drugs are about equally toxic or, if anything, SN 7618 is slightly less toxic than quinacrine.



Chloroquine (SN 7618): 7-chloro-4 (4-diethylamino-1-methylbutylamino) quinoline.

In man, the symptoms which have been observed following doses of SN 7618 adequate for treatment of the acute attack include mild and transient headache, visual disturbances, pruritus and gastrointestinal complaints. In chronic toxicity studies in man using a dose (0.5 Gm. weekly) in excess of that necessary for adequate suppression, no serious symptoms and no impairment of health have been observed in 31 subjects over a period of eleven months of consecutive drug administration. In studying the record of about 5,000 individuals who have received SN 7618, every symptom which has been observed has been recorded in an effort to bring out even minimal toxic manifestations. In a small number of instances, usually with dosages higher than necessary for either treatment or suppression, individual subjects have refused to continue drug administration because of unpleasant symptoms. None of these manifestations has been constitutionally serious and all have been readily reversible. Unlike quinacrine, SN 7618 does not discolor the skin.

In a study of the chronic toxicity of SN 7618 on a dosage of 0.5 Gm. once a week, 1 patient in 31 after eight months developed a lichen planus-like eruption. This eruption subsided ten days after discontinuation of the drug.

ANTIMALARIAL ACTIVITY

SN 7618 is more active than quinacrine in all the avian malarias in which it has been tested. In cathemerium malaria both in the canary and in the duck it is 3.5 times as active as quinacrine. Different tests against gallinaceum malaria show it from 5 to 13 times as active as quinacrine. In lophurae malaria in the duck it is 2.5 times as active as quinacrine. Like quinacrine, SN 7618 does not produce permanent cures in any of these infections, nor is either drug prophylactic in sporozoite-induced cathemerium malaria in the canary or gallinaceum malaria in the chick.

SN 7618 is highly active against the erythrocytic forms of P. vivax and Plasmodium falciparum. It does not prevent relapses in vivax malaria even when administered in doses many times those required to terminate an acute attack, nor will it prevent the establishment of vivax infection when administered as a prophylactic. It is highly effective in vivax malaria as a suppressive agent and in the termination of acute attacks, significantly lengthening the interval between treatment and relapse beyond that observed with quinacrine or quinine. In falciparum malaria it has been demonstrated to suppress the acute attack and to effect complete cure of the infection. Studies of the antimalarial activity of SN 7618 against well standardized strains of P. vivax and P. falciparum have shown its activity to be approximately three times that of quinacrine. In well tolerated therapeutic doses a great majority of patients will be afebrile within twenty-four hours and the remainder within forty-eight hours. Thick smears for parasites will generally be negative at forty-eight to seventy-two hours.

RECOMMENDED DOSAGE REGIMENS

A. *In Suppression.*—Effective suppression of malaria with single weekly doses has been demonstrated. For suppressive therapy a dose of 0.3 Gm. given on the same day each week is recommended.

B. *In Treatment of the Acute Attack.*—An initial dose of 0.6 Gm. of SN 7618 followed by an additional 0.3 Gm. after six to eight hours and a single dose of 0.3 Gm. on each of two consecutive days is sufficient to produce prompt disappearance of symptoms and of parasitemia. This regimen eradicates infection due to P. falciparum and terminates the acute attack of P. vivax infection. In the latter, freedom from clinical attacks may be maintained thereafter by administration of suppressive doses as recommended. Satisfactory responses have also been reported following the administration of 1.2 Gm. in divided doses over a period of twenty-four hours.

Finance and Organization.—In the intellectual establishment of the country the alternatives now forced on government represent in essence a profound difference, the difference between central and distributed responsibility. Directly local authorities cease to exist and the thinking and the differences in thinking on which diversity of activity has depended are ceded to a central agent, a central government, to central authority instead, diversity dies.—Cohn, Alfred E.: Minerva's Progress, New York, Harcourt, Brace & Co., 1946.

Clinical Notes, Suggestions and New Instruments

DELAYED SENSITIZATION TO PENICILLIN SIMILAR TO SERUM SICKNESS

JOHN A. STRAZZA Jr., M.D.
Jersey City, N. J.

Many reactions to penicillin or to toxic impurities contained in individual batches of the extract have been described. Lyons[1] reported such reactions as chills, fever, headache, eosinophilia and other pathologic conditions. Keefer[2] reported urticaria. Other toxic manifestations have been thrombophlebitis,[3] gastrointestinal reaction,[4] contact dermatitis[5] and vesicular dermatitis.[6] Bullous dermatitis was reported by Morris and Downing.[7] Fortunately, none of these reactions were of such severity as to jeopardize the life of the patient. Several references call attention to occasional reactions simulating serum sickness. These reactions may be of such severity as to be alarming. Price, McNairy and White report 1 such case, resulting in severe asthma almost causing the death of their patient.[8] It is my purpose to report another case of delayed sensitization to penicillin of unusual severity.

P. G., a white man aged 23, a physician, was admitted to the Jersey City Medical Center on April 16, 1945 because of painful swelling of the right leg. Family and past histories revealed no evidence of allergic manifestations in the patient or in any close relatives. Physical examination was negative except for a red, tender, nonfluctuant area about 5 by 5 cm. over the upper one third of the posterior aspect of the right leg. Two large tender nodes were palpable in the right inguinal region. On May 18 the abscess was opened and a moderate amount of purulent material was expressed. Because of the cellulitis, penicillin was started on May 21 and continued through May 24, 20,000 units intramuscularly every three hours for a total of 500,000 units. It was noted during the administration of the penicillin that there was itching at the site of injection and flushing of the face. The temperature remained normal throughout the hospital course. Urinalysis was negative, the white blood cell count 7,300 with 70 per cent polymorphonuclear leukocytes, 25 per cent lymphocytes, 2 per cent monocytes and 3 per cent eosinophils. The patient was discharged on April 25, 1945 in good health.

He was readmitted on May 5 because of severe urticaria and pruritus beginning three days prior to admission. The patient attempted to treat himself with epinephrine. His pruritus became so severe that he was forced to use epinephrine in 0.5 cc. doses every half hour. One day prior to admission he noted urticaria on his buttocks. On the day of admission he noted painful swelling of the hands and feet. Examination revealed that he was acutely ill, thrashing around in bed and exhausted from lack of sleep and continuous motion. There was swelling of the face, hands and feet. Large areas of urticaria were noted on the buttocks and back. The uvula was edematous. There was intense pain on motion of the hands and feet. Walking was difficult as a result of pain. There were generalized bleeding scratch marks on the skin. The heart and lungs were normal, the temperature was 99 F., the pulse rate 96 and the respiratory rate 22 per minute. The urine showed a faint trace of albumin. The white blood cell count was 9,300, with 80 per cent polymorphonuclear leukocytes, 18 per cent lymphocytes and 2 per cent eosinophils. The blood Wassermann reaction was negative. Blood sugar and nonprotein nitrogen determination were within normal limits.

Epinephrine in oil 7 minims (0.4 cc.) was given every four hours as needed. This produced temporary relief lasting about one hour. Linit starch baths three times daily also gave short lasting relief of one to one and one-half hours. Calcium gluconate given intravenously was ineffective. Twelve hours following admission the patient became very weak and faint. His pulse was rapid and of poor quality. He was put in the Trendelenburg position. Four hours later he became very restless and complained bitterly of pain in his hands and fingers, headache and dyspnea. Epinephrine was given with relief of symptoms. Insomnia continued in spite of phenobarbital ½ grain (0.032 Gm.) given three times a day and sodium pentobarbital 1½ grains given at night. Thirty hours following admission urticaria was very severe on the face, especially around the chin and mouth. The patient complained of increasing dyspnea and difficulty in swallowing solid foods. Examination revealed edema of the pharynx with considerable swelling of the uvula. Epinephrine 7 minims and one hour later ephedrine sulfate ⅜ grain (0.024 Gm.) and phenobarbital ½ grain (0.032 Gm.) were given with definite relief of symptoms. Forty-eight hours after admission he complained of severe stiff neck. This again was relieved by administration of epinephrine in oil. On the third hospital day, seventy-two hours after admission, the patient's symptoms suddenly subsided. He was discharged on May 13, 1945, asymptomatic.

It is estimated that in the three days prior to admission to the hospital the patient administered approximately 130 minims (6 cc.) of epinephrine to himself. While hospitalized, he received a total of 52 minims (3.1 cc.). A scratch test performed with penicillin of the same manufacturer and same lot as that originally used on the patient in concentration of 15,000 units per cubic centimeter gave a negative result.

Whether the sensitizing agent in this case was the active principle of penicillin or other substances in commercial penicillin capable of producing sensitization is not known. If the former is true, then in spite of the fact that refinements in manufacture will free penicillin from more and more foreign substances, these severe and all too alarming reactions will continue to occur occasionally and therefore must be anticipated.

Jersey City Medical Center.

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[1] Lyons, Champ: Penicillin Therapy of Surgical Infections in the U. S. Army, J. A. M. A. **123:** 1007 (Dec. 18) 1943.

[2] Keefer, Chester S.; Plake, F. G.; Marshall, E. K.; Lockwood, J. S., and Wood, W. B.: Penicillin in the Treatment of Infections, J. A. M. A. **122:** 1217 (Aug. 28) 1943.

[3] Progress with Penicillin, editorial, Lancet **2:** 546 (Oct. 30) 1943.

[4] Moore, J. E.; Mahoney, J. F.; Schwartz, W. H.; Sternberg, C. T., and Wood, W. B.: The Treatment of Early Syphilis with Penicillin, J. A. M. A. **126:** 67 (Sept. 9) 1944. Stokes, J. H.; Sternberg, C. T.; Schwartz, W. H.; Mahoney, J. F.; Moore, J. E., and Wood, W. B.: The Action of Penicillin in Late Syphilis, ibid. **126:** 73 (Sept. 9) 1944.

[5] Pyle, H. D., and Rattner, H.: Contact Dermatitis from Penicillin, J. A. M. A. **125:** 903 (July 29) 1944. Binkley, G. W., and Brockmole, A.: Dermatitis from Penicillin, Arch. Dermat. & Syph. **50:** 326 (Nov.) 1944.

[6] Graves, W. H.; Carpenter, C. C., and Unangst, R. W.: Recurrent Vesicular Eruptions Appearing During Administration of Penicillin, Arch. Dermat. & Syph. **50:** 6 (July) 1944.

[7] Morris, G. E., and Downing, J. G.: Bullous Dermatitis (Dermatitis Medicamentosa) from Penicillin, J. A. M. A. **127:** 711 (May 24) 1945.

[8] Price, D. E.; McNairy, D. J., and White, E. L.: Severe Asthma: Delayed Sensitization to Penicillin, J. A. M. A. **128:** 183 (May 19) 1945.

POSITIVE URINE METHYLENE BLUE TEST IN AMEBIC HEPATITIS

LIEUTENANT COMMANDER SIDNEY E. CHAPIN (MC), U.S.N.R.

It was with the greatest interest that the experiences of Myers[1] and Gellis and Stokes[2] with the methylene blue test for bilirubin in urine were received on the Pacific island on which I was stationed. As fortune would have it, however, my associates and I instituted the test as a routine procedure too late to use it as a diagnostic aid in infectious hepatitis. On the other hand, the test did prove an aid in cases already under treatment, and the experience here was the same as that described by Gellis and Stokes. In determining the course of the disease and the occurrence of relapses, of which we saw a few, the test was accurate.

Then we got a positive test in a case of amebic hepatitis which we feel is noteworthy.

REPORT OF CASE

A Marine aged 21 was admitted to the medical service on September 10 with a diagnosis of catarrhal fever (the usual admission diagnosis of most of our cases of infectious hepatitis

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From U. S. Fleet Hospital 115, F. P. O., San Francisco.

This article has been released for publication by the Division of Publications of the Bureau of Medicine and Surgery of the U. S. Navy. The opinions and views set forth in this article are those of the writer and are not to be considered as reflecting the policies of the Navy Department.

[1] Myers, C. P.: Use of Methylene Blue in Testing for Bilirubin in Urine, J. Indust. Hyg. & Toxicol. **27:** 52 (Feb.) 1945.

[2] Gellis, S. S., and Stokes, Joseph, Jr.: The Methylene Blue Test in Infectious (Epidemic) Hepatitis, J. A. M. A. **128:** 782 (July 14) 1945.

in the months when the admissions were many and the test was not available). For five days he had had chilly sensations, general malaise, pain in the right side of the chest, some ill defined shoulder pain on the right and a low grade fever. Because of limited expansion of the right side of the chest and diminished breath sounds at the base of the right lung the patient's battalion surgeon had carried him on a diagnosis of bronchopneumonia until a negative x-ray was procured.

At the division hospital, the day before admission to this hospital, it was noted that the area of liver dulness had increased and there was pronounced tenderness and muscle spasm in the right upper quadrant. The icterus index was 5.5, the sedimentation rate 30 mm. per hour, the leukocyte count 12,000 and the differential normal.

On admission to this fleet hospital the history was essentially the same except for the additional facts elicited of an intermittent diarrhea of six weeks' duration (blood and mucus not noted) and a complete anorexia for the past few days. Before admission the patient was given large doses of sulfadiazine for three days without effect on the course of the illness. He was well developed and fairly well nourished, showed evidence of recent loss of weight, was nonicteric and appeared acutely ill. The lag of the right side of the chest and pain on deep inspiration were very obvious. The temperature was 100.6 F., the pulse rate 84 and regular, and the respiratory rate 20. The upper respiratory tract was clear, the heart was normal, and breath sounds were diminished at the right base with slightly increased fremitus but no rales and no bronchial breathing. The liver was palpable 1½ inches below the costal margin, it was exquisitely tender, and there was some voluntary spasm of the upper right rectus muscle. Pressure against the lower end of the bony cage of the chest elicited considerable tenderness. The remainder of the abdomen was normal, and the remainder of the examination was negative.

A routine urinalysis on admission was negative except for considerable bile and a strongly positive test with methylene blue. The blood count revealed 70 per cent hemoglobin (Tallqvist), 3.65 million red cells and 9,900 white cells, with a differential count of 84 per cent polymorphonuclears, 24 per cent lymphocytes and 2 per cent eosinophils. X-ray examination showed an elevated right diaphragm with compression of the right lower lobe. A stool specimen revealed large numbers of Endameba histolytica. The icterus index was 12.5.

Because of the anorexia, the positive methylene blue test, the prodromes, the enlarged liver and the fact that the patient came from an organization where infectious hepatitis had occurred previously, a diagnosis of infectious hepatitis was entertained on admission. However, the history of diarrhea and the exquisite liver tenderness prompted the stool examination, which was positive for amebas.

Treatment with emetine and carbarsone, choline chloride, a high protein diet and multivitamin tablets was instituted immediately. The patient's temperature remained normal after twenty-four hours. After the fourth dose of emetine the liver tenderness had diminished, and on the fifth day after admission the methylene blue test of the urine became negative. The patient's appetite was excellent after the second hospital day.

Three weeks after admission the patient was evacuated to a rear area with a liver that was no longer palpable and appeared normal on x-ray examination. The patient was apparently making an uneventful recovery from the hepatitis.

COMMENT

Methylene blue tests were done here on the urine from patients taking atabrine, 1 patient with cirrhosis of the liver and 2 patients in the orthopedic service with massive tissue hemorrhages. All the tests were negative. This was done in an attempt to find other conditions that might influence the test.

We realize that we are not contributing anything to the controversy, mainly chemical, that this test has set off. We cannot help feeling, however, that the test is not an indication of the presence of bilirubin but rather of a substance, as yet unidentified, which is excreted in the urine when the liver is acutely inflamed.

It is felt that this test is valuable in pointing the attention of the examiner to the liver. Done routinely in acute disease, so many cases of which have a similar onset, it would help to sort out cases of the type reported here in which specific therapy might have been instituted days before.

SUMMARY AND CONCLUSION

1. In a case of amebic hepatitis the methylene blue test of the urine was positive until specific therapy with emetine was instituted, after which the test became negative.
2. This test is of value in pointing the diagnostic finger toward the liver in acute inflammatory conditions of that organ.
3. The methylene blue test of the urine is a simple procedure which can be done without so-called laboratory facilities. It is urged that it be adopted as part of all routine urinalyses.

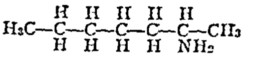
Council on Pharmacy and Chemistry

NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its action will be sent on application.

AUSTIN SMITH, M.D., *Secretary.*

TUAMINE.—Racemic 2-aminoheptane.—Racemic β-aminoheptane.—$C_7H_{17}N$.—M. W. 115.22. The structural formula of 2-aminoheptane is:



$$\begin{array}{ccccccccccccc} & & H & & H & & H & & H & & H & & \\ H_3C & - & C & - & C & - & C & - & C & - & C & - & CH_3 \\ & & H & & H & & H & & H & & NH_2 & & \end{array}$$

Actions and Uses.—Tuamine produces vasoconstrictive action and is a member of the group of compounds known as sympathomimetic amines. Inhalation of the vapors provides an effective method of treatment for acute rhinologic conditions and is of added usefulness when prolonged and repeated medication is necessary (*see also general monograph on sympathomimetic amines*). It should be used with caution by those who have cardiovascular disease. It is made available in an "inhaler" type of device.

Dosage.—One or two gentle inhalations through each nostril, repeated at hourly intervals if needed.

Tests and Standards.—

Tuamine occurs as a colorless to pale yellow liquid which boils within the range *138.5-142.5 C. It is sparingly soluble in water* but freely soluble in ether, ethanol, chloroform and benzene.

At 25 C tuamine exhibits a *refractive index of from* 1.4150 to 1.4200, a specific gravity of from *0.7600* to *0.7660* and a vapor pressure of *approximately 4.8 mm* of mercury. *The pH of a 1 per* cent solution of tuamine is 11.45.

Dissolve 1 cc. of tuamine and 1 Gm. of potassium cyanate *in 25 cc* of distilled water to which 5 cc. of 10 per cent sulfuric acid has been added. Warm the solution on a steam *bath for one hour*, cool, filter, wash with distilled water and dry the crystals at *100 C*: the product melts at *127-129 C.*

Transfer about 1 cc. of tuamine to a tared weighing bottle and weigh it accurately. *Evaporate the* tuamine on a *steam bath to con*stant weight: the nonvolatile residue does not exceed 0.2 per cent. Dissolve 1 cc. of tuamine in *10 cc. of liquid petrolatum, U. S. P. XII*: no turbidity is produced.

Weigh accurately about 1 Gm. of tuamine and *dissolve it in 25 cc.* of half normal sulfuric acid. Titrate the excess acid with *half normal* sodium hydroxide, using methyl red as the indicator. *Each cubic centi*meter of half-normal sulfuric acid is equivalent to 0.0576 Gm. of tuamine: the tuamine content is not less than *99.0 per cent.*

ELI LILLY & CO., *INDIANAPOLIS*

Tuamine Inhaler: *Each* inhaler *contains* at the time of *packing 2-aminoheptane* carbonate, equivalent to 325 mg. of 2-aminoheptane, menthol, 32 mg. and ylang ylang oil, 65 mg.

Tuamine Inhaler.—

Transfer the contents of *the inhaler to an ammonia distillation* flask and rinse the container with water, adding the washings to the flask. Add 3 cc. of *40 per* cent sodium *hydroxide and distil* the amine into 35 cc. of tenth normal hydrochloric acid. Complete the determination as directed under tuamine. Each cubic *centimeter of tenth normal* hydrochloric acid is equivalent to 0.01152 Gm. of tuamine: the amount of tuamine found is not less than 95 per cent *nor more than 105 per* cent of the amount claimed to be present at the time of packaging.

EPHEDRINE HYDROCHLORIDE (See New and Nonofficial Remedies, 1945, p. 283).

The following additional dosage form has been accepted:

ABBOTT LABORATORIES, NORTH CHICAGO, ILL.

***Solution* Ephedrine Hydrochloride 5% and Procaine Hydrochloride 1%:** 2 cc. ampuls.

HOSPITAL SERVICE IN THE UNITED STATES

TWENTY-FIFTH ANNUAL PRESENTATION OF HOSPITAL DATA BY THE COUNCIL ON MEDICAL EDUCATION AND HOSPITALS OF THE AMERICAN MEDICAL ASSOCIATION

F. H. Arestad, M.D., and M. G. Westmoreland, M.D.

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In the present report on Hospital Service in the United States it will be found in comparison with 1944 that the number of hospital beds has increased from 1,729,945 to 1,738,944, the number of admissions from 16,036,848 to 16,257,402, the number of patient days from 475,607,484 to 512,915,155 and the number of hospital births from 1,919,976 to 1,969,667. These and other items of special interest are contained in the following report, which includes (1) a compilation of information and statistics on hospital service including number, size and classification of hospitals, bed capacity, patients admitted, births, average daily census, hospital days, average length of stay and percentage occupancy; (2) special tables with detailed information on hospitals in each state, classified by control and type of service; (3) a study of nursing personnel, schools of nursing education and technical personnel; (4) a discussion on necropsy performance in approved internship hospitals; (5) a report on internships and residencies in specialties; (6) a list of residencies in specialties approved by the Council and the respective specialty boards since Sept. 29, 1945, when the latest list of Approved Residencies and Fellowships was published in The Journal; (7) a complete list of hospitals registered by the American Medical Association with symbols designating hospitals approved for internships and residencies, hospitals standardized by the American College of Surgeons and schools of nursing accredited by the respective states, and (8) lists and other information regarding technical schools approved by the American Medical Association.

SUMMARY OF HOSPITAL DATA—1945

All Registered Hospitals	
Number	6,511
Bed capacity	1,738,944
Bassinets	83,131
Patients admitted	16,257,402
Births	1,969,667
Average daily census	1,405,247
Patient days	512,915,155

General Hospitals	
Number	4,744
Bed capacity	922,549
Bassinets	78,919
Patients admitted	15,228,270
Births	1,907,772
Average daily census	665,105
Patient days	242,763,325

Hospitals not registered (capacity 16,172) 496

Hospitals applying for registration 101

The lists and statistical data presented in this report were compiled directly from information received from individual institutions. As in previous years, the hospitals submitted their reports on annual census blanks representing a combined hospital questionnaire prepared by the American Medical Association and the American College of Surgeons. This uniform procedure, inaugurated six years ago, has been welcomed by hospital administrators everywhere as it conserves time and effort and helps to eliminate unnecessary duplication in the preparation of hospital reports. The present survey began in October 1945, each hospital having been requested to supply information for the twelve month period which ended September 30. Excellent cooperation was received, as evidenced by replies from nearly 98 per cent of the registered hospitals. Over 99 per cent of the hospitals approved for internships and residencies in specialties furnished reports to the Council.

The information published annually in the Hospital Number of The Journal has become increasingly valuable in the study and evaluation of hospital facilities in the United States. The present report is presented as a service to the medical profession and to all institutions, organizations and agencies concerned with hospital activities and allied functions. It should prove a valuable source of reference in connection with state surveys and other studies now being carried out in relation to pending hospital legislation. The Council on Medical Education and Hospitals wishes to extend its sincere appreciation to the military and government officials, hospital administrators and other personnel whose generous cooperation has made possible the completion of the present survey.

SCOPE OF HOSPITAL SURVEY

Represented in the report for 1945 are 6,511 hospitals registered by the American Medical Association, including 1,156 hospitals approved for internships and residencies and 2,625 accredited by the American College of Surgeons as meeting unconditionally its minimum requirements for general standardization. The hospitals of the Army, Navy, U. S. Public Health Service, Veterans Administration and other federal agencies are also represented in the tabulation, although it was not possible at this time to include all of these institutions in the published list. It may be anticipated therefore, that totals derived from the list itself may not be identical with the total hospital service illustrated in tables 1 and 2 of the statistical report. The present survey was likewise extended to the hospitals in Alaska, Canal Zone, Hawaii, Puerto Rico, and Virgin Islands. These will be found in the registered list but do not appear in the tabular report, which pertains only to hospital facilities located within the continental limits of the United States.

Summary of Growth of Hospitals, 1909 to 1945

	Federal Hospitals		State Hospitals		All Other Hospitals		Total	
Year	Number	Capacity	Number	Capacity	Number	Capacity	Number	Capacity
1909	71	8,827	232	189,049	4,056	223,189	4,359	421,065
1914	93	12,602	294	232,834	4,650	287,045	5,037	532,481
1918	110	18,815	303	262,254	4,910	331,182	5,323	612,251
1923	220	53,869	601	302,208	6,009	399,645	6,830	755,722
1928	294	61,765	595	369,759	5,963	461,410	6,852	892,934
1931	291	69,170	576	419,282	5,746	485,663	6,613	974,115
1932	301	74,151	568	442,601	5,693	497,602	6,562	1,014,354
1933	295	75,635	557	459,646	5,585	491,765	6,437	1,027,046
1934	313	77,865	544	473,035	5,477	497,201	6,334	1,048,101
1935	316	83,353	526	483,994	5,404	507,792	6,246	1,075,139
1936	323	84,234	524	503,306	5,342	509,181	6,189	1,096,721
1937	329	97,951	522	508,913	5,277	517,684	6,128	1,124,548
1938	330	92,248	523	541,279	5,313	527,853	6,166	1,161,380
1939	329	96,338	523	560,575	5,374	538,113	6,226	1,195,026
1940	336	108,928	521	572,079	5,434	545,238	6,291	1,226,245
1941	428	179,202	530	600,320	5,400	544,859	6,358	1,324,381
1942	474	220,938	530	606,437	5,341	556,452	6,345	1,383,827
1943	827	476,673	531	610,115	5,297	562,466	6,655	1,649,254
1944	798	551,135	539	609,025	5,274	569,785	6,611	1,729,945
1945	705	546,384	549	619,642	5,257	572,918	6,511	1,738,944

NUMBER, SIZE AND CLASSIFICATION OF HOSPITALS

The number of hospitals included in this study totals 6,511 or 100 less than reported in 1944. There was a net loss of 79 in the governmental classification and a decrease of 30 in the proprietary group. The nonprofit organizations, however, had a net gain of 9. The greatest change was in the federal institutions, where the general hospitals were reduced from 707 to 609. Variations in other divisions may be noted in tables 1 and 2 showing hospitals classified by control and type of service and also in the summary table, which combines the service classification and the agencies concerned. Since the publication of the Hospital Number, March 31, 1945, a total of 86 new institutions have been admitted to the Hospital Register whereas 186 have been closed or transferred to the unclassified file. Applications under consideration at the present time total 101. These are now being reviewed in accordance with the standards of the Council outlined in the Essentials of a Registered Hospital.

There is a group of 496 hospitals which, according to information received, do not fulfil the present requirements for registration. Their capacity is relatively small, however, totaling only 16,172 or less than 1 per cent of the beds reported in all hospitals. Certain other facilities are also omitted from the Register such as clinics, emergency stations and offices which occasionally provide a limited number of beds for temporary or emergency care.

Summary of Hospital Service Classified by Control

	Hospitals	Beds	Average Census	Bassinets	Births	Admissions
Governmental						
Federal	705	546,384	391,935	3,923	61,874	4,047,919
State	549	619,642	580,783	1,746	32,075	559,352
County	508	102,121	77,510	4,294	75,433	614,465
City	359	77,365	56,418	5,657	125,011	1,014,874
City-county	62	11,206	7,768	966	20,756	162,470
Total governmental	2,183	1,356,718	1,114,414	16,586	315,149	6,399,113
Nongovernmental						
Church	1,036	135,481	110,557	25,465	665,153	3,887,100
Nonprofit associations	1,954	195,805	147,694	32,497	793,220	4,745,712
Total nonprofit	2,990	331,286	258,251	57,962	1,458,373	8,632,812
Individual and partnership	987	30,216	17,442	5,597	122,582	715,908
Corporations (profit unrestricted)	351	20,724	15,140	2,986	73,563	509,569
Total proprietary	1,338	50,940	32,582	8,583	196,145	1,225,477
Total nongovernmental	4,328	382,226	290,833	66,545	1,654,518	9,858,289
Total all hospitals	6,511	1,738,944	1,405,247	83,131	1,969,667	16,257,402

Information regarding the size of hospitals has previously been published in THE JOURNAL, March 30, 1935, March 11, 1939, March 30, 1940 and March 31, 1945. In the present report a table has again been included on the size of general hospitals, nervous and mental institutions, tuberculosis sanatoriums and other hospital services. In addition it should be noted that the 4,135 nonfederal general hospitals included in this report may be classified in the following manner: below 25 beds 1,005, 26-50 beds 981, 51-100 beds 911, 101-200 beds 714, 201-300 beds 273 and over 300 beds 251.

On the basis of ownership or control the registered hospitals may be divided into two major classifications —governmental and nongovernmental hospitals. The first, comprising 2,183 institutions, consists of 705 federal hospitals, 549 state, 508 county, 359 municipal and 62 under city-county control. The nongovernmental hospitals, 4,328 in all, may likewise be divided into two groups, the nonprofit organizations and the proprietary hospitals. The latter include 987 individual and partnership hospitals and 351 corporations unrestricted as to profit while the nonprofit organizations, a group of 2,990, represent 1,036 church related hospitals and 1,954 other nonprofit associations.

Summary of Hospital Data According to Type of Service

Type	Hospitals	Beds	Average Census	Bassinets	Births	Admissions
General	4,744	922,549	665,105	78,919	1,907,772	15,228,270
N & M	563	657,393	624,349	295	1,190	218,876
Tuberculosis	449	78,774	59,767	54	79	86,186
Maternity	106	5,656	3,741	3,544	60,445	77,078
Industrial	36	2,963	1,847	....	4	68,234
E.E.N.T.	42	2,664	1,615	8	.....	105,531
Children's	44	4,770	3,495	81	.....	90,097
Orthopedic	83	6,679	4,781	19	.....	29,151
Isolation	63	8,406	3,223	87	29	99,599
Conv. and rest.	102	9,556	7,009	32	9	87,285
Institutions	168	17,720	11,093	32	135	112,211
All other hospitals	111	21,814	19,222	40	4	61,621
Total all hospitals	6,511	1,738,944	1,405,247	83,131	1,969,667	16,257,402

Twelve separate groups are included in the classification of hospitals according to type of service. The three principal divisions are the general hospitals, 4,744 in number, the nervous and mental institutions, 563, and the tuberculosis sanatoriums, 449. The remaining groups, totaling 755 institutions, may be listed as follows: maternity hospitals 106, industrial 36, eye, ear, nose and throat 42, children's 44, orthopedic 83, isolation 63, convalescent and rest 102, institutional 168 and other types 111. Of the general hospitals 3,521 are nongovernmental whereas 1,223 are in the governmental classification including 609 federal general hospitals.

Number of Hospitals According to Size

Bed Capacity	General Hospitals	Nervous and Mental	Tuberculosis	Other Hospitals	Total Number
Below 25	1,024	31	27	153	1,235
26 50	1,050	80	81	220	1,431
51 100	992	65	121	195	1,373
101 200	808	43	100	115	1,066
201 300	340	28	47	38	453
Over 300	530	316	73	34	953
Totals	4,744	563	449	755	6,511

BED CAPACITY

The hospitals registered by the Council have a combined capacity of 1,738,944 beds exclusive of 83,131 bassinets. Although a number of hospitals were discontinued in 1945 the development or expansion of other services resulted in a net increase of 8,999 beds. This may be compared with the average annual gain of 26,000 beds from 1909 to 1940, the increase of 80,691 in 1944 and the rapid wartime expansion of 265,427 in 1943.

Both the governmental and the nongovernmental hospitals showed a slight increase in bed capacity last year, the governmental group reporting 1,356,718 or 78 per cent of all beds, the nongovernmental hospitals 382,226 or 22 per cent. The federal hospitals which expanded rapidly during the war, had a net loss of 4,751 beds in comparison with the 1944 report. The county hospitals remained practically at their previous level, reporting a loss of only 423 beds, whereas the municipal institutions had a reduction of 2,322. The principal change in governmental classification occurred in the state group, which showed an increased capacity of 10,617. The hospitals under joint city and county control had a more limited gain of 1,319 beds In the nongovernmental hospitals the increase was 4,559 beds, 2,572 in the nonprofit associations and 1,987 in the proprietary group.

Governmental and Nongovernmental Hospital Service

	Hospitals	Beds	Average Census	Bassinets	Births	Admissions
Governmental						
General	1,223	601,266	420,860	15,637	307,136	5,856,396
N & M	358	639,929	609,665	249	273	190,487
Tuberculosis	318	67,190	50,833	53	75	70,607
Special	142	31,997	22,684	595	7,531	182,319
Institutions	142	16,336	10,372	52	134	99,304
Total governmental	2,183	1,356,718	1,114,414	16,586	315,149	6,399,113
Nongovernmental						
General	3,521	321,283	244,245	63,282	1,600,636	9,371,874
N & M.	205	17,464	14,684	46	917	58,389
Tuberculosis	131	11,584	8,934	1	4	15,579
Special	445	30,511	22,249	3,216	52,960	399,540
Institutions	26	1,384	721		1	12,907
Total nongovernmental	4,328	382,226	290,833	66,545	1,654,518	9,858,289
Total all hospitals	6,511	1,738,944	1,405,247	83,131	1,969,667	16 257,402

In the present survey the general hospitals reported 922,549 beds as compared with 925,818 in 1944. This represents a net decrease of 3,269 whereas the previous year showed an increase of 75,242. With their present facilities the general hospitals have 53 per cent of all beds. If classified by control it will be found that the governmental general hospitals have 601,266 beds or 34.6 per cent while the nongovernmental general hospitals have 321,283 or 18 4 per cent. The federal group, it should be noted, has 476,075 general hospital beds in a total capacity of 546,384. The mental institutions have 37.7 per cent of all beds having increased their capacity from 648,745 in 1944 to the present total of 657,393. Of this number 639,929 beds are located in hospitals operating under governmental supervision, particularly state control. The tuberculosis sanatoriums have 78,774 beds, a reduction of 1,074 as compared with the previous year. These facilities, however, do not include the tuberculosis beds available in connection with general and other hospital services. The three major divisions of general, mental and tuberculosis hospitals have 95 3 per cent of all registered hospital beds. The capacity of other groups may be noted in the tabular data presented in this report.

Summary of Hospital Service in the United States According to Type of Service and Agencies Concerned from the 1945 Census of Hospitals Registered by the American Medical Association

U S Totals	6 511	1,738,944	1,405,247	83,131	1,969,667	16,257,402
Type	Hospitals	Beds	Average Census	Bassinets	Births	Admissions
Federal						
Totals	705	546,384	391,935	3,923	61,874	4,047,949
General	609	476,075	333,137	3,816	61,584	3,898,995
N & M	36	56,725	49,030	10	.....	46,432
TB	18	6,180	4,940	19	11	12,194
Special	24	6,328	4,339	70	253	77,245
Institutions	18	1,076	489	8	26	13,083
State						
Totals	549	619,642	580,783	1,746	82,075	559,352
General	58	21,424	14,711	1,451	81,280	286 090
N & M	268	551,441	531,294	232	255	134 231
TB	76	24,686	18,721	2	21	21,962
Special	50	15,091	13,383	23	411	52,689
Institutions	97	6,390	2,674	38	108	61,350
County						
Totals	508	102,121	77,510	4,294	75,433	614,468
General	242	43,967	29,261	3,856	68,558	557,005
N & M	50	27,542	25 391	6	12	8,222
TB	183	23,434	17,714	18	10	22,013
Special	19	2,820	1,669	414	6,853	13,765
Institutions	14	4,358	3,475	. .	.....	13,463
City						
Totals	359	77,365	56,118	5,657	125,011	1,014,874
General	273	51,303	37,950	5,578	121,966	956 638
N & M	4	4,221	3 950	1	1	1,602
TB	25	10,531	7,695	14	30	12,190
Special	45	6,833	3,104	58	14	36,370
Institutions	12	4,477	3,719	6	.....	8,074
City County						
Totals	62	11,206	7,768	966	20,756	162,470
General	41	8,497	5,801	936	20,756	157,608
N & M	.		.	....	.....	.....
TB	16	2,349	1,763	..	.....	2,218
Special	4	325	189	30	.....	2,250
Institutions	1	35	15	....	.....	304
Church						
Totals	1,036	135 481	110,557	25,465	665,153	3,887,100
General	907	123,790	101,158	24,070	644,820	3,822,973
N & M	18	3,290	3,018	. ..	.....	5,212
TB	19	2,419	2,050	. .	1	3,807
Special	91	5,964	4,329	1,395	20,332	54,958
Institutions	1	18	2	. ..	.....	150
Nonprofit						
Totals	1,954	195,805	147,694	32,497	793,220	4,745,712
General	1,564	160,315	121,098	31,026	767,456	4,422,694
N & M	30	5 474	4,803	42	917	17,515
TB	79	7,430	5 531	1	2	8,887
Special	256	21,220	15,543	1,428	24,641	283 859
Institutions	25	1,366	719	....	1	12,757
Individual and Partnership						
Totals	987	30,216	17,442	5,597	122,582	715 908
General	803	23,278	12,127	5,263	116,011	665,508
N & M	86	4,073	3,144	. .	. ...	16 602
TB	21	838	702	.	.	1,438
Special	77	2,027	1,469	334	6,571	32,310
Institutions	. .	.	..	....	.....	......
Corporations						
Totals	351	20,724	15,140	2,986	73,563	509,569
General	247	13,900	9 862	2,923	72,319	460,699
N & M	71	4,627	3,719	4	.....	19,060
TB	12	897	651	.	1	1,427
Special	21	1,300	908	59	1,213	28,383
Institutions			.	.	.....	. .

TABLE 1.—HOSPITAL FACILITIES BY STATES AND BY CONTROL: A. GOVERNMENT HOSPITALS

Marginal No.		Federal					State					County					City					City-County					Total Governmental					Marginal No.
		Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	
1	Alabama	16	9,803	131	70,526	[illegible]	8	8,298	8	8,613	8,001	8	1,035	106	20,328	817	3	208	46	4,037	99	6	590	98	18,903	371	41	19,934	389	129,307	15,634	1
2	Arizona	26	5,143	105	350 66	[illegible]	3	1,310	..	1,005	1,269	7	482	67	8,227	312	1	10	4	183	8	..	...	..	.....	...	37	6,943	176	44,181	1,106	2
3	Arkansas	9	8,054	46	63,653	[illegible]	4	6,264	28	7,250	6,134	1	212	2	231	179	3	213	47	7,602	158	..	...	..	.....	...	17	14,713	123	78,786	11,952	3
4	California	75	74,917	596	618,635	[illegible]	17	32,737	31	24,400	31,793	56	19,571	737	155,479	14,569	5	401	71	8,412	186	3	2,514	50	17,181	1,021	156	130,140	1,185	821,187	103,271	4
5	Colorado	12	12,418	63	76,720	[illegible]	8	5,759	20	6,469	5,323	5	280	57	6,901	159	1	113	17	2,962	74	2	634	36	10,074	322	28	19,264	195	103,126	15,785	5
6	Connecticut	5	1,129	...	10,564	[illegible]	15	12,958	10	5,864	11,608	..	.....	...	.....	...	4	788	8	4,214	479	..	...	..	.....	...	24	11,875	18	20,612	12,913	6
7	Delaware	3	286	...	4,277	[illegible]	5	2,320	7	631	[illegible]	..	.....	...	.....	...	..	.....	...	....	....	..	...	..	.....	...	8	2,606	7	4,968	2,288	7
8	District of Columbia	7	11,812	106	38,066	[illegible]	..	.....	..	.....	....	..	.....	...	.....	...	5	3,040	100	[illegible]	2,260	..	...	..	.....	...	12	14,852	266	57,449	13,439	8
9	Florida	36	19,604	359	221,069	[illegible]	7	[illegible]	13	9,667	6,257	7	973	87	9,825	547	10	1,416	217	[illegible]	1,006	3	183	13	2,105	122	63	29,157	689	285,841	20,358	9
10	Georgia	24	21,323	274	185,883	[illegible]	4	[illegible]	..	3,103	9,298	10	714	85	14,153	[illegible]	8	1,546	228	[illegible]	997	7	631	104	18,517	561	53	33,501	691	263,364	27,125	10
11	Idaho	5	6,299	17	23,910	[illegible]	3	[illegible]	..	261	1,697	3	147	47	4,518	90	1	26	6	[illegible]	8	1	80	22	2,445	62	13	8,325	92	31,697	4,978	11
12	Illinois	17	25,330	31	161,121	[illegible]	21	[illegible]	62	24,699	41,026	27	8,669	310	65,012	5,891	22	3,387	220	[illegible]	2,248	1	120	..	138	101	88	81,049	623	286,604	69,654	12
13	Indiana	9	7,388	18	34,902	[illegible]	18	[illegible]	62	18,669	14,465	37	2,591	392	51,899	1,944	5	939	68	[illegible]	[illegible]	..	...	..	.....	...	69	76,450	540	120,885	23,754	13
14	Iowa	6	5,173	18	22,812	[illegible]	14	[illegible]	63	20,317	11,414	9	558	38	[illegible]	324	10	322	105	[illegible]	243	..	...	..	.....	...	39	18,447	224	59,404	16,506	14
15	Kansas	15	8,113	35	56,487	[illegible]	11	[illegible]	33	12,156	7,773	7	329	66	6,956	229	10	333	98	[illegible]	253	..	...	..	.....	...	43	17,115	232	85,157	12,001	15
16	Kentucky	12	9,372	24	56,200	[illegible]	9	[illegible]	23	6,410	7,443	4	259	15	4,134	236	4	235	48	[illegible]	150	4	1,306	85	16,427	893	33	18,438	195	90,125	15,432	16
17	Louisiana	16	9,587	52	79,558	[illegible]	11	[illegible]	309	65,672	10,370	..	.....	...	.....	...	1	100	...	[illegible]	52	..	...	..	.....	...	28	22,544	361	145,637	16,218	17
18	Maine	6	1,584	...	9,768	[illegible]	6	[illegible]	2	1,097	4,064	..	.....	...	.....	...	3	211	33	[illegible]	125	..	...	..	.....	...	15	6,169	35	13,340	4,992	18
19	Maryland	10	10,221	73	100,067	[illegible]	13	[illegible]	83	15,201	9,787	3	204	36	3,563	110	3	1,459	82	[illegible]	862	1	175	50	6,064	167	30	22,476	324	140,449	20,051	19
20	Massachusetts	11	18,864	106	133,741	[illegible]	27	[illegible]	56	15,235	32,257	8	1,368	...	1,245	907	26	6,225	578	[illegible]	3,998	1	35	..	304	15	76	60,052	740	227,032	53,168	20
21	Michigan	10	12,495	12	44,638	[illegible]	20	[illegible]	59	27,102	22,504	28	13,306	92	20,300	8,956	38	5,049	627	[illegible]	3,871	1	45	5	305	10	97	65,088	795	190,630	46,437	21
22	Minnesota	10	2,086	31	14,660	2,170	18	[illegible]	44	15,998	14,959	15	1,647	15	3,708	1,255	25	1,030	247	[illegible]	1,100	4	907	72	8,794	625	72	23,529	412	72,418	20,109	22
23	Mississippi	14	9,798	63	112,414	5,620	10	[illegible]	63	10,031	4,898	2	110	26	3,200	51	3	86	25	[illegible]	38	2	133	50	5,923	97	31	15,830	227	133,909	10,704	23
24	Missouri	12	11,876	13	64,003	7,249	13	[illegible]	24	8,680	11,543	6	504	79	7,211	315	16	8,867	266	[illegible]	7,176	..	...	..	.....	...	47	31,129	382	127,157	26,283	24
25	Montana	7	658	33	7,604	348	2	[illegible]	..	691	2,157	4	280	16	870	157	..	.....	...	....	....	..	...	..	.....	...	13	3,108	49	9,165	2,662	25
26	Nebraska	10	2,128	42	23,024	1,029	9	[illegible]	61	4,639	6,252	2	410	18	3,231	319	2	44	14	704	27	..	...	..	.....	...	23	8,986	135	31,598	7,627	26
27	Nevada	5	383	25	6,357	212	1	370	..	73	428	4	386	51	6,609	286	..	.....	...	....	....	..	...	..	.....	...	10	1,139	76	13,030	926	27
28	New Hampshire	2	664	10	6,456	532	3	3,193	1	897	3,106	4	318	38	1,978	160	2	130	15	1,835	50	..	...	..	.....	...	11	4,305	64	11,166	3,848	28
29	New Jersey	10	15,833	82	115,186	7,639	16	18,032	5	7,563	16,511	22	10,517	687	15,549	8,373	9	2,660	60	34,026	2,059	..	...	..	.....	...	57	47,012	834	172,324	35,982	29
30	New Mexico	24	4,773	67	36,124	4,268	5	1,304	10	1,703	1,184	..	.....	...	.....	...	1	50	12	2,655	52	..	...	..	.....	...	30	6,127	80	40,482	4,104	30
31	New York	38	39,590	171	331,693	31,842	47	102,322	57	30,461	96,530	36	5,455	127	20,457	3,965	49	23,231	1,072	268,854	18,692	1	131	..	73	101	171	170,729	1,130	671,538	151,130	31
32	North Carolina	14	15,709	131	103,666	9,610	11	10,339	8	9,883	9,805	16	1,025	74	13,074	861	2	437	55	10,606	282	5	434	67	9,004	267	48	27,914	335	146,233	20,825	32
33	North Dakota	5	321	25	3,825	209	3	3,308	3	651	3,197	1	65	6	175	15	3	105	13	1,711	35	..	...	..	.....	...	12	3,862	46	6,365	3,456	33
34	Ohio	11	8,967	29	49,371	8,504	22	29,885	38	23,593	28,264	27	3,846	120	15,924	3,036	19	3,696	410	71,557	2,920	..	...	..	.....	...	79	46,594	597	160,445	42,784	34
35	Oklahoma	26	11,019	172	75,115	5,804	15	10,900	38	15,300	9,991	2	121	25	2,253	54	8	378	112	11,637	234	..	...	..	.....	...	51	22,418	347	104,305	16,083	35
36	Oregon	12	4,688	41	20,275	2,911	9	6,107	35	9,739	5,611	3	139	24	3,001	100	2	131	6	769	25	..	...	..	.....	...	26	11,065	106	33,784	8,677	36
37	Pennsylvania	11	12,416	11	73,000	10,375	42	48,380	194	47,452	15,736	17	4,313	8	4,030	3,271	8	4,153	82	29,262	2,375	1	55	..	80	48	79	60,623	295	154,724	61,805	37
38	Rhode Island	4	2,339	...	28,417	1,834	4	5,563	24	1,880	4,903	..	.....	...	.....	...	1	265	...	2,112	125	..	...	..	.....	...	9	8,167	24	32,409	6,802	38
39	South Carolina	12	6,328	101	66,230	3,605	4	6,484	..	3,268	6,204	11	1,333	171	29,717	939	3	488	56	10,515	382	..	...	..	.....	...	30	14,633	328	115,736	11,130	39
40	South Dakota	12	2,189	45	18,805	1,002	4	2,836	..	616	2,477	..	.....	...	.....	...	3	70	17	2,317	34	..	...	..	.....	...	19	5,094	62	21,768	3,513	40
41	Tennessee	12	20,150	69	85,577	11,870	9	7,216	..	3,200	6,917	7	2,282	34	3,657	1,636	4	1,083	145	31,523	819	4	966	114	12,482	671	36	32,027	362	136,439	21,913	41
42	Texas	59	11,065	268	336,836	27,091	19	19,591	24	25,801	18,098	22	1,299	198	31,776	761	8	601	122	18,095	387	15	2,117	200	33,651	1,111	123	61,673	812	446,149	47,748	42
43	Utah	8	4,608	52	27,722	3,519	4	2,020	..	1,434	1,832	4	382	63	5,070	239	5	125	58	3,836	87	..	...	..	.....	...	21	7,203	173	38,062	5,666	43
44	Vermont	1	188	...	1,656	131	5	1,633	..	605	1,568	..	.....	...	.....	...	..	.....	...	....	....	..	...	..	.....	...	6	1,821	...	2,161	1,702	44
45	Virginia	20	25,135	133	185,565	20,253	15	13,681	165	31,282	13,338	1	32	7	900	17	6	1,177	46	8,026	894	..	...	..	.....	...	42	40,025	351	225,779	34,502	45
46	Washington	18	13,331	153	112,906	9,331	7	9,135	..	4,650	8,522	15	2,136	143	25,942	1,787	2	357	...	285	243	..	...	..	.....	...	42	24,959	206	113,698	19,883	46
47	West Virginia	5	5,112	18	22,995	4,217	12	6,116	18	7,160	5,639	3	176	30	3,020	120	2	308	36	9,137	234	..	...	..	.....	...	22	11,712	102	42,312	10,210	47
48	Wisconsin	6	2,958	38	19,636	2,033	12	5,727	40	14,918	5,272	60	11,894	126	22,677	13,606	13	772	125	16,023	383	..	...	..	.....	...	91	24,351	320	73,151	21,384	48
49	Wyoming	4	1,864	20	15,412	1,185	4	1,203	25	3,452	1,099	4	353	72	10,226	260	..	.....	...	....	....	..	...	..	.....	...	12	3,122	123	29,090	2,814	49
50	Totals (1945)	705	516,384	3,923	4,047,019	391,935	549	619,612	1,746	[illegible]	580,783	508	102,121	4,294	614,468	77,510	359	77,365	5,657	1,014,874	56,418	62	11,206	966	162,470	7,768	2,183	1,356,718	16,586	[illegible]	1,111,414	50
51	(1944)	798	551,135	3,462	4,287,271	303,875	539	609,025	1,690	[illegible]	570,441	504	102,544	3,859	571,581	77,856	365	79,687	5,491	996,423	57,417	56	9,887	757	133,721	6,594	2,262	1,352,278	15,289	[illegible]	1,016,183	51
52	(1943)	827	476,073	[illegible]	4,032,607	268,740	531	610,115	1,623	[illegible]	571,570	511	100,151	3,763	591,706	77,789	354	77,879	5,215	942,028	57,848	61	11,321	842	162,628	7,773	2,284	1,276,130	13,839	[illegible]	983,732	52
53	(1942)	474	220,938	1,206	1,675,722	147,091	530	636,437	1,618	[illegible]	566,457	505	98,997	3,512	606,390	76,948	354	79,252	4,847	999,087	60,982	61	10,157	645	126,395	7,157	1,924	1,015,781	11,828	[illegible]	858,638	53
54	(1941)	428	179,202	1,006	1,268,112	118,890	530	600,320	1,572	[illegible]	561,620	512	98,227	3,288	643,740	83,214	337	78,060	5,045	999,559	61,019	57	9,702	583	130,960	7,149	1,864	965,511	11,491	[illegible]	831,892	54
55	(1940)	336	108,928	1,089	657,137	86,604	521	572,079	1,347	[illegible]	539,994	514	102,340	3,097	615,247	87,029	332	79,045	4,390	986,859	63,644	64	11,297	636	126,487	7,401	1,767	873,689	10,559	[illegible]	784,672	55
56	(1939)	329	99,338	823	477,417	80,692	523	560,575	1,234	[illegible]	527,000	501	100,976	2,748	569,280	86,177	320	77,231	4,210	951,295	61,766	67	10,026	589	127,386	7,513	1,740	845,146	9,661	[illegible]	764,018	56
57	(1938)	330	92,218	772	445,891	75,470	523	541,279	1,127	[illegible]	512,839	490	96,621	2,591	552,066	80,202	317	75,180	4,089	928,924	61,006	68	9,808	542	130,762	7,110	1,728	815,136	9,111	[illegible]	736,087	57
58	(1937)	329	97,951	731	439,480	80,519	522	508,913	1,111	[illegible]	485,891	484	93,379	2,641	549,332	80,575	324	79,368	3,937	897,685	64,928	63	9,138	499	111,019	6,667	1,722	788,719	9,277	[illegible]	718,850	58
59	(1936)	323	84,234	675	420,570	68,752	521	503,306	1,136	[illegible]	478,778	484	87,541	2,388	497,766	76,277	332	78,950	3,947	885,058	65,508	61	9,809	496	108,873	7,520	1,724	763,840	8,612	[illegible]	696,835	59
60	(1935)	316	83,353	604	382,980	64,705	526	484,994	1,186	[illegible]	462,070	490	90,904	2,375	476,275	79,280	328	73,322	3,742	809,054	60,751	64	10,139	510	111,398	8,025	1,721	741,712	8,417	[illegible]	671,921	60
61	(1934)	313	77,865	560	324,354	58,209	511	473,035	1,154	[illegible]	447,014	496	83,919	2,404	451,425	71,137	328	71,931	3,680	792,887	59,891	68	11,138	518	113,860	8,720	1,749	717,888	8,310	[illegible]	645,000	61
62	(1933)	295	75,635	502	321,160	56,720	537	459,616	925	[illegible]	435,527	511	80,410	2,220	466,921	69,047	344	69,630	3,627	762,013	57,865	69	9,143	541	172,696	6,909	1,776	694,473	7,815	[illegible]	626,071	62
63	(1932)	301	74,151	461	320,628	57,951	563	442,631	1,014	[illegible]	417,232	514	84,534	2,116	384,265	71,089	358	69,551	3,520	767,096	57,582	63	8,530	510	100,812	6,281	1,801	679,307	7,660	[illegible]	610,168	63
64	(1931)	291	69,170	391	301,149	52,881	576	419,282	846	[illegible]	394,938	508	77,373	1,932	345,236	62,962	364	61,351	3,478	680,529	46,851	77	14,348	615	108,450	11,766	1,810	641,521	7,262	[illegible]	569,301	64
65	(1930)	289	63,581	271	....	50,459	591	405,709	788	....	380,279	505	73,615	1,498	....	60,520	364	63,064	3,246	....	47,880	74	14,157	497	....	11,550	1,812	619,720	6,303	....	550,737	65
66	(1929)	292	59,901	229	....	40,033	578	385,706	785	....	364,042	487	65,619	1,385	....	52,994	357	57,128	3,093	....	42,410	81	11,183	570	....	11,376	1,795	582,537	6,062	....	516,885	66
67	(1928)	294	67,165	117	....	......	595	369,759	813	....	....	489	63,231	1,297	....	......	272	65,120	3,161	....	......	63	7,553	284	....	......	1,813	567,134	5,672	....	....	67
68	(1927)	301	60,414	...	....	42,137	592	354,760	...	....	328,737	450	58,907	.....	....	47,704	366	63,327	.....	....	46,389	70	7,703	...	....	5,196	1,809	545,169	.....	....	470,157	68

NUMBER OF PATIENTS ADMITTED

The tremendous task which confronts hospitals each year is clearly illustrated in the present report of 16,257,402 admissions exclusive of outpatients and newborn infants. This is equivalent to 12.3 per cent of the total population according to the U. S. Census of 1940, and may also be represented as 1 admission every 1.9 seconds. Since 1935 the admissions in the hospitals registered by the American Medical Association have more than doubled in number. The greatest annual gain occurred in 1943 when an increase of 2,829,088 was reported. The following year showed an increase of 662,150 while the present survey indicates a net gain of 220,554 in comparison with 1944.

The governmental hospitals with 78 per cent of the bed capacity reported 6,399,113 admissions or 39 per cent of the patients admitted in 1945. Nongovernmental hospitals, which received 61 per cent, had 9,858,289. Both groups showed a substantial increase in hospital admissions in 1944 but in the present survey the governmental hospitals showed a net loss of 146,107 as compared with the previous year. This reduction was limited to the federal group, which had a total decrease of 239,322 whereas the other governmental classifications showed an increase of 93,215. Gains in hospital admissions were reported in all nongovernmental groups including 179,109 in the church related institutions, 149,664 in the other nonprofit associations,

TABLE 1.—HOSPITAL FACILITIES BY STATES AND BY CONTROL: B. NONPROFIT ORGANIZATIONS

Marginal No.		Church Related (Nonprofit)					Nonprofit Associations					Total Nonprofit					Marginal No.
		Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	
1	Alabama	11	1,058	222	42,991	703	18	1,338	207	37,705	956	29	2,396	429	80,696	1,749	1
2	Arizona	8	1,059	152	33,085	804	17	765	143	12,499	346	25	1,824	295	45,584	1,150	2
3	Arkansas	10	1,113	205	38,341	916	13	844	103	10,986	480	23	1,957	308	58,327	1,396	3
4	California	52	6,973	1,470	243,068	6,212	79	8,151	1,200	229,171	6,598	131	15,124	2,670	472,239	12,810	4
5	Colorado	27	2,652	465	74,598	2,196	25	2,288	120	24,539	1,595	52	4,940	585	99,137	3,791	5
6	Connecticut	7	1,690	311	47,401	1,333	39	5,902	984	136,222	4,523	46	7,592	1,295	183,623	5,856	6
7	Delaware	1	105	32	[illegible],301	65	8	1,124	187	23,439	748	9	1,229	219	25,740	813	7
8	District of Columbia	4	837	180	31,399	690	10	1,841	342	42,519	1,456	14	2,678	522	73,918	2,146	8
9	Florida	8	1,077	262	35,936	790	36	1,894	351	46,721	1,255	44	2,971	613	82,657	2,045	9
10	Georgia	9	840	126	26,788	714	23	1,923	292	58,572	1,425	32	2,763	418	85,360	2,139	10
11	Idaho	12	941	211	29,006	658	8	220	53	4,107	116	20	1,161	264	33,113	774	11
12	Illinois	92	13,560	2,457	369,482	11,247	99	10,747	2,007	281,896	8,344	191	24,307	4,464	651,378	19,591	12
13	Indiana	30	4,955	1,009	141,966	3,824	21	1,573	321	50,417	1,225	51	6,528	1,330	192,383	5,049	13
14	Iowa	42	4,622	832	134,740	3,898	22	1,163	261	34,664	840	64	5,780	1,093	169,404	4,738	14
15	Kansas	40	3,685	748	107,766	3,025	24	1,018	186	26,442	662	64	4,703	934	134,208	3,687	15
16	Kentucky	14	1,945	349	64,821	1,653	31	1,930	272	51,598	1,256	45	3,875	621	116,419	2,909	16
17	Louisiana	10	1,669	314	77,644	1,536	21	1,420	211	46,417	944	31	3,089	525	124,061	2,480	17
18	Maine	6	550	104	15,222	460	31	1,965	390	47,645	1,469	37	2,515	494	62,857	1,929	18
19	Maryland	9	2,102	265	39,343	1,725	33	4,821	620	91,132	3,646	42	6,923	885	130,475	5,371	19
20		16	2,771	511	64,230	2,276	111	11,581	2,066	257,386	8,697	127	14,352	2,577	321,616	10,973	20
21		32	4,914	1,095	156,632	3,852	97	9,009	1,632	219,635	6,444	129	13,923	2,727	376,267	10,296	21
22		35	4,154	727	135,511	3,704	67	3,773	800	116,141	2,930	102	7,927	1,527	251,652	6,634	22
23		4	425	74	19,874	368	35	1,462	280	46,224	889	39	1,887	354	66,098	1,257	23
24	Missouri	41	6,408	1,061	161,001	5,490	30	2,847	421	56,834	2,058	71	9,255	1,482	217,835	7,548	24
25		26	2,017	405	55,442	1,407	7	289	66	8,176	218	33	2,306	471	63,618	1,085	25
26		29	2,687	529	75,436	2,105	12	573	131	17,504	424	41	3,260	660	92,940	2,529	26
27	Nevada	1	75	15	2,702	67	2	100	21	1,838	40	3	175	36	4,540	107	27
28	New Hampshire	4	432	76	10,836	330	25	1,544	339	36,598	1,008	29	1,976	415	47,434	1,338	28
29	New Jersey	17	3,606	628	78,703	2,820	76	9,687	1,767	205,645	7,183	93	13,293	2,395	284,348	10,003	29
30	New Mexico	14	915	166	22,607	654	8	321	33	5,119	182	22	1,236	199	27,726	836	30
31	New York	78	12,648	2,111	237,302	9,760	222	33,904	5,012	722,629	26,512	300	46,552	7,123	959,931	36,272	31
32	North Carolina	14	1,317	293	39,387	1,049	84	6,149	1,055	197,275	4,552	98	7,466	1,348	2 6 662	5,601	32
33	North Dakota	24	1,982	388	65,220	1,508	8	366	78	9,938	270	32	2,348	466	75,158	1,778	33
34	Ohio	44	7,750	1,456	242,263	6,673	93	9,335	1,666	267,913	7,318	137	17,085	3,122	510,176	13,991	34
35	Oklahoma	8	1,037	236	32,988	802	14	985	167	27,268	536	22	2,022	403	60,256	1,338	35
36	Oregon	19	2,515	534	85,309	1,952	14	803	136	23,437	570	33	3,318	670	108,746	2,522	36
37	Pennsylvania	41	6,060	1,042	126,022	4,610	202	28,998	4,605	635 657	22,544	243	35,058	5,647	761,679	27,154	37
38	Rhode Island	3	460	60	7,361	348	13	1,806	380	41,187	1,397	16	2,266	440	48,548	1,745	38
39	South Carolina	6	537	110	20,233	426	26	1,976	344	57,494	1,316	32	2,513	454	77,727	1,742	39
40	South Dakota	16	1,205	260	37,644	975	12	586	130	16,795	412	28	1,791	390	53,439	1,387	40
41	Tennessee	11	1,631	242	62,829	1,442	26	2,107	318	54,272	1,539	37	3,738	560	117,101	2,981	41
42	Texas	50	5,269	1,122	201,080	4,291	51	2,932	367	84,299	1,821	101	8,201	1,489	285,379	6,112	42
43	Utah	6	1,165	251	35,208	859	7	267	91	7,923	182	13	1,432	342	43,131	1,041	43
44	Vermont	3	220	47	6,182	216	19	1,913	227	28,768	1 550	22	2,133	274	34,950	1,766	44
45	Virginia	3	373	73	12,164	317	47	4,261	782	127,749	3,043	50	4,634	855	139,913	3,360	45
46	Washington	24	2,901	651	93,479	2,346	29	3,119	617	94,921	3,101	53	6,020	1,268	188,400	5,447	46
47	West Virginia	9	1,092	175	35,117	880	15	1,681	191	38,697	1,235	24	2,773	366	73,814	2,115	47
48	Wisconsin	63	7,427	1,395	206,468	6,404	39	2,321	480	67,361	1,731	102	9,748	1,875	273,829	8,135	48
49	Wyoming	3	55	18	1,972	27	5	185	45	6,338	83	8	240	63	8,310	115	49
50	Totals (1945)	1,036	135,481	25,465	3,887,100	110,557	1,954	195,805	32,497	4,745,712	147,694	2,990	331,286	57,962	8,632,812	258,251	50
51	(1944)	1,020	133,000	24,948	3,707,991	105,940	1,961	195,624	31,854	4,596,018	144 228	2,981	328,714	56,802	8,304,0 9	250 263	51
52	(1943)	1,004	130,488	24,007	3,503,396	101,150	1,952	192,219	30,731	4,456,274	140,095	2,956	322.707	54,738	7,959,670	241 245	52
53	(1942)	977	126,141	22,262	3,211,162	94,521	1,949	190,150	29,154	4,252,486	141,633	2,926	316,291	51,416	7,463,648	236 154	53
54	(1941)	993	123,331	20,145	2,961,594	90,195	1,917	182,140	26,422	3,931,141	132,472	2,910	305,471	46 567	6,892,735	222,667	54
55	(1940)	998	120,809	18,561	2,679,876	85,007	1,903	177,681	24,978	3,574,974	125,737	2,901	298,490	43,539	6,254,850	210,764	55
56	(1939)	1,001	120,740	18,044	2,682,762	81,984	1,839	172,765	23,371	3,503,488	119,342	2,840	293,505	41,415	6,186,250	201,326	56
57	(1938)	981	119,521	17,320	2,531,796	80,576	1,776	169,980	22,523	3,316,310	117,558	2,757	289,501	39,843	5,848,106	198,134	57
58	(1937)	975	115,283	16,851	2,495,114	79,113	1,718	162,474	21,511	3,201,042	114 508	2,693	277,757	38,362	5,696,156	193 621	58
59	(1936)	969	113,288	16,360	2,286,064	74,037	1,742	162,586	21,238	2,972,708	107,510	2,711	275,854	37,598	5,258,772	181,517	59
60	(1935)	970	113,268	16,033	1,950,308	69,592	1,670	155,300	20,119	2,327,207	98,089	2,640	268,568	36,152	4,477,515	167,680	60
61	(1934)	970	113,263	16,067	1,786,522	63,851	1,676	154,449	20,184	2,377,213	93,216	2,646	267,712	36,251	4,163,735	157,067	61
62	(1933)	984	115,840	16,190	1,733,565	63,621											
63	(1932)	1,001	117,555	16,125	1,918,214	70,119											
64	(1931)	1,011	116,935	15,861	2,013,352	73,911											
65	(1930)	1,017	116,846	15,615	....	75,162											
66	(1929)	1,024	113,555	15,037	....	75,770											
67	(1928)	1,056	114,613	13,190	....	......											
68	(1927)	1,060	108,582	......	....	73,813											

36,943 in the individual and partnership hospitals and 945 in the hospitals classified as corporations unrestricted as to profit.

TABLE 1.—HOSPITAL FACILITIES BY STATES AND BY CONTROL: C. PROPRIETARY | TOTAL NONGOVERNMENTAL

Marginal No.		Individual and Partnership					Corporations (Profit Unrestricted)					Total Proprietary					Totals of Tables 1B and 1C					Marginal No.
		Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	
1	Alabama	30	990	192	26,663	520	9	513	98	16,869	345	39	1,503	290	43,532	865	68	3,899	719	124,228	2,614	1
2	Arizona	5	105	29	1,079	68	..	...	..	....	...	5	105	29	1,079	68	30	1,929	324	46,663	1,218	2
3	Arkansas	23	598	140	23,612	323	2	59	19	2,028	35	25	657	159	25,640	358	48	2,614	467	83,967	1,754	3
4	California	92	3,239	579	79,722	2,417	36	1,999	336	55,495	1,627	128	5,238	915	135,217	4,044	259	20,362	3,585	607,456	16,851	4
5	Colorado	19	629	90	8,927	419	3	157	7	942	76	22	786	97	9,869	495	74	5,726	682	109,006	4,286	5
6	Connecticut	4	70	..	1,461	59	8	544	..	1,275	396	12	614	...	2,736	455	58	8,206	1,295	186,359	6,311	6
7	Delaware	..	...	..	....	...	1	15	6	301	8	1	15	6	301	8	10	1,244	225	26,041	821	7
8	Dist. Columbia	2	45	6	425	28	1	242	63	8,505	209	3	287	69	8,930	237	17	2,965	591	82,848	2,383	8
9	Florida	18	574	103	20,373	348	5	209	39	4,780	126	23	783	142	25,153	474	67	3,751	755	107,810	2,519	9
10	Georgia	38	1,096	180	31,762	743	9	400	76	18,861	285	47	1,496	256	50,623	1,028	79	4,259	674	135,983	3,167	10
11	Idaho	10	268	57	5,883	121	2	40	18	1,002	24	12	308	75	6,885	145	32	1,469	339	39,998	919	11
12	Illinois	33	957	109	10,283	666	16	1,366	128	19,733	993	49	2,323	237	30,016	1,659	240	26,630	4,701	681,394	21,250	12
13	Indiana	17	360	66	12,165	200	6	409	29	12,440	290	23	769	95	24,605	490	74	7,297	1,425	216,988	5,539	13
14	Iowa	27	3,527	158	12,135	278	4	133	21	2,635	98	31	3,660	179	14,770	376	95	9,443	1,272	184,171	5,114	14
15	Kansas	15	324	84	7,123	187	5	200	31	4,194	126	20	524	115	11,317	313	84	5,227	1,049	145,525	4,000	15
16	Kentucky	13	316	55	6,375	180	8	410	70	14,870	263	21	726	125	21,245	443	66	4,601	746	137,664	3,352	16
17	Louisiana	23	496	161	20,063	336	7	390	66	14,978	287	30	886	227	35,041	623	61	3,975	752	159,102	3,101	17
18	Maine	8	220	58	4,505	169	4	91	20	1,477	51	12	311	78	5,982	220	49	2,826	572	68,849	2,149	18
19	Maryland	12	446	15	2,988	357	1	88	22	1,891	42	13	534	37	4,879	399	55	7,457	922	135,354	5,770	19
20	Massachusetts	6	156	33	1,782	97	21	956	162	20,924	769	27	1,112	195	22,706	866	154	15,464	2,772	344,322	11,839	20
21	Michigan	25	595	125	9,892	335	6	280	..	3,142	228	31	875	125	13,034	563	160	14,798	2,852	389,301	10,859	21
22	Minnesota	27	434	140	10,231	251	8	765	16	26,937	656	35	1,199	156	37,168	907	137	9,126	1,683	288,820	7,541	22
23	Mississippi	28	897	164	29,967	521	..	...	..	....	...	28	897	164	29,967	521	67	2,784	518	96,065	1,778	23
24	Missouri	20	684	202	16,866	431	7	382	78	6,430	296	27	1,066	280	23,296	727	98	10,321	1,762	241,131	8,275	24
25	Montana	7	140	41	4,157	94	2	128	25	3,005	95	9	268	66	7,162	189	42	2,574	537	70,780	1,674	25
26	Nebraska	36	631	206	16,162	355	3	147	18	1,284	117	39	778	224	17,446	472	80	4,038	884	110,386	3,001	26
27	Nevada	1	55	12	1,433	32	..	...	..	....	...	1	55	12	1,433	32	4	230	48	5,073	137	27
28	New Hampshire	..	...	..	....	...	1	100	..	55	38	1	100	..	55	38	30	2,076	415	47,489	1,376	28
29	New Jersey	7	166	17	1,239	130	6	350	..	895	225	13	516	17	2,134	355	106	13,809	2,412	286,482	10,358	29
30	New Mexico	1	10	3	30	2	2	50	15	1,633	30	3	60	18	1,663	32	25	1,296	217	29,789	868	30
31	New York	44	1,476	318	22,068	1,026	34	3,203	608	66,625	2,129	78	4,679	926	88,693	3,155	378	51,231	8,019	1,048,624	39,427	31
32	North Carolina	19	511	83	13,476	329	6	284	33	7,479	204	25	795	116	20,955	533	123	8,261	1,404	257,617	6,131	32
33	North Dakota	2	33	13	1,036	20	..	...	..	....	...	2	33	13	1,036	20	34	2,381	479	76,194	1,798	33
34	Ohio	10	363	28	5,990	265	8	500	4	2,238	431	18	863	32	8,228	696	155	17,948	3,154	518,404	14,687	34
35	Oklahoma	51	1,365	327	42,293	786	11	444	64	15,225	334	62	1,809	391	57,518	1,120	84	3,831	794	117,774	2,478	35
36	Oregon	14	471	114	13,658	300	10	370	86	11,782	260	24	841	200	25,440	560	57	4,159	870	134,186	3,082	36
37	Pennsylvania	26	879	94	9,375	645	6	260	5	2,729	211	32	1,139	99	12,104	856	275	36,197	5,746	773,783	28,010	37
38	Rhode Island	..	...	..	....	...	..	...	..	....	...	..	...	..	.....	...	16	2,266	440	48,548	1,745	38
39	South Carolina	9	211	37	6,158	93	3	101	12	1,767	62	12	312	49	7,925	155	44	2,825	503	85,652	1,897	39
40	South Dakota	6	122	26	1,982	88	1	17	8	445	7	7	139	34	2,427	95	35	1,930	424	55,866	1,482	40
41	Tennessee	41	1,027	191	33,773	654	6	245	53	7,431	169	47	1,272	244	41,204	823	84	5,010	804	158,305	3,804	41
42	Texas	134	2,965	767	114,765	1,744	37	1,765	325	59,937	1,258	171	4,730	1,092	174,702	3,002	272	12,931	2,581	460,081	9,114	42
43	Utah	5	170	48	3,238	79	..	...	..	....	...	5	170	48	3,238	79	18	1,602	390	46,369	1,120	43
44	Vermont	..	...	..	....	...	1	25	..	44	8	1	25	..	44	8	23	2,158	274	31,991	1,774	44
45	Virginia	19	686	138	20,179	460	15	1,071	157	34,107	924	34	1,757	295	54,286	1,384	84	6,391	1,150	194,189	4,744	45
46	Washington	21	626	116	18,327	427	1	25	6	572	15	22	651	122	18,899	442	75	6,671	1,390	207,299	5,889	46
47	West Virginia	13	848	116	28,774	554	21	1,571	228	47,673	1,067	34	2,419	344	76,447	1,621	58	5,192	710	150,261	3,736	47
48	Wisconsin	19	336	111	10,286	247	7	401	26	4,237	314	26	737	137	14,523	561	128	10,485	2,012	288,352	8,696	48
49	Wyoming	7	99	45	3,227	58	1	19	8	697	12	8	118	53	3,924	70	16	358	116	12,234	185	49
50	Totals (1945)	987	30,216	5,597	715,908	17,442	351	20,724	2,986	500,569	15,140	1,338	50,940	8,583	1,225,477	32,582	4,328	382,226	66,515	9,858,259	290,833	50
51	(1944)	1,011	27,301	5,648	678,965	16,972	357	21,632	3,052	508,624	16,051	1,368	48,953	8,700	1,187,589	33,023	4,349	377,667	65,502	9,491,628	283,291	51
52	(1943)	1,031	27,314	5,370	638,999	16,282	384	23,094	3,187	513,202	15,865	1,415	50,408	8,557	1,152,201	32,147	4,371	373,115	63,295	9,111,871	273,792	52
53	(1942)	1,089	27,996	5,147	576,466	15,715	406	23,759	3,057	495,821	15,521	1,495	51,755	8,204	1,072,287	31,236	4,421	368,016	59,620	8,735,935	267,790	53
54	(1941)	1,149	28,760	5,034	545,884	16,582	435	24,639	3,048	494,967	15,898	1,584	53,399	8,102	1,040,851	32,480	4,494	358,870	54,669	7,932,586	255,147	54
55	(1940)	1,174	28,958	4,820	500,040	15,049	449	25,108	3,021	463,654	15,686	1,623	54,066	7,841	963,694	30,735	4,524	352,556	51,250	7,218,544	241,499	55
56	(1939)	1,190	29,879	4,756	501,860	14,955	456	26,496	2,989	456,759	16,154	1,646	56,375	7,745	958,619	31,109	4,486	349,850	49,160	7,144,869	232,445	56
57	(1938)	1,188	30,193	4,557	495,553	15,255	493	26,550	3,236	470,136	15,630	1,681	56,743	7,793	965,689	30,885	4,438	346,244	47,626	6,813,795	229,019	57
58	(1937)	1,183	29,957	4,766	503,359	15,458	530	28,085	3,516	507,077	16,477	1,713	58,042	8,282	1,015,436	31,935	4,406	335,799	46,644	6,711,592	225,776	58
59	(1936)	1,204	28,496	4,356	437,797	13,672	550	28,511	3,629	497,457	16,462	1,734	57,007	7,985	935,254	30,134	4,465	332,831	45,583	6,194,026	211,651	59
60	(1935)	1,255	29,913	4,384	413,997	14,212	627	34,946	4,357	532,590	18,697	1,882	64,859	8,741	946,587	32,909	4,522	333,427	44,893	5,424,102	209,559	60
61	(1934)	1,310	29,429	4,391	366,313	12,046	629	33,072	4,038	458,303	15,985	1,939	62,501	8,429	824,616	28,031	4,585	330,213	44,690	4,983,751	185,095	61
62	(1933)	1,435	33,385	4,962	381,861	13,746											4,661	332,573	44,649	4,882,444	181,197	62
63	(1932)	1,522	25,759	5,094	428,256	16,309											4,758	331,957	44,572	5,178,508	198,277	63
64	(1931)	1,560	36,764	5,352	459,184	17,912											4,797	332,591	44,232	5,322,898	206,095	64
65	(1930)	1,620	38,557	5,233	....	19,948											4,907	336,143	43,281	....	212,615	65
66	(1929)	1,611	37,977	5,212	....	20,604											4,870	324,566	41,877	....	209,881	66
67	(1928)	1,699	39,710	4,843	....	......											5,079	325,300	37,641	....	......	67
68	(1927)	1,682	39,118	.....	....	21,779											4,998	308,149	......	....	201,675	68

The general hospitals supply the greatest volume of hospital service in the United States. Last year they admitted 15,228,270 patients—93.6 per cent of all admissions—and maintained an average daily patient load of 665.105, in addition giving care to 1,907,772 newborn infants, or 96.8 per cent of all live births reported in the registered hospitals in 1945. Nongovernmental general hospitals had a total of 9,371,874 admissions, the federal general hospitals 3,898,995 and the other governmental general hospitals 1,957,401. Increases in general hospital admissions were reported in all governmental and nongovernmental classifications except in the federal hospitals and in the unrestricted corporation group. In this connection it may be noted that the governmental general hospitals have 34.6 per cent of the hospital beds and 36 per cent of the total admissions, while the corresponding figures for the nongovernmental general hospitals are 18.4 and 57.6 respectively.

The mental hospitals with 37.7 per cent of all beds had 248,876 admissions or only 1.5 per cent of the total patients admitted in 1945. Of this number 190,487 were received in governmental hospitals including 134,231 in state institutions. In comparison with 1944 there was an increased number of mental patients admitted in all nongovernmental groups. The mental hospitals under state, county and municipal control

TABLE 2.—HOSPITAL FACILITIES BY STATES AND BY TYPE OF SERVICE (Continued on next page)

Marginal No.		General					Nervous and Mental					Tuberculosis					Maternity					Industrial					Eye, Ear, Nose and Throat					Marginal No.
		Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	
1	Alabama	83	[illegible]	997	223,461	8,779	7	9,239	44	15,005	8,712	8	565	..	1,175	449	3	82	66	1,099	29	..	...	..	....	...	..	...	..	....	...	1
2	Arizona	50	[illegible]	485	85,438	3,071	2	1,173	..	668	1,130	13	1,540	..	4,329	1,064	1	17	15	414	10	..	...	..	....	...	..	...	..	....	...	2
3	Arkansas	56	[illegible]	558	147,094	5,910	2	[illegible]	8	3,263	6,278	2	1,349	..	1,593	1,219	1	30	12	95	25	2	275	..	5,381	123	..	...	..	....	...	3
4	California	303	[illegible]	4,785	1,340,663	75,220	36	[illegible]	..	25,964	36,978	30	4,855	..	4,969	4,051	11	519	282	6,347	380	2	597	..	12,213	582	2	61	..	3,265	38	4
5	Colorado	63	[illegible]	835	186,936	11,885	9	[illegible]	..	3,240	6,414	13	1,175	..	770	874	2	74	27	245	50	2	46	..	723	20	..	...	..	....	...	5
6	Connecticut	42	[illegible]	1,295	193,521	5,748	15	[illegible]	1	4,960	10,977	7	1,828	..	1,022	1,483	1	9	6	96	2	..	...	..	....	...	1	150	..	1,000	160	6
7	Delaware	12	[illegible]	232	30,373	1,280	2	[illegible]	..	366	1,618	3	216	..	159	173	..	...	...	...	...	..	...	..	....	...	..	...	..	....	...	7
8	District of Columbia	17	[illegible]	716	115,219	7,038	2	[illegible]	10	2,966	7,488	1	610	..	519	541	2	181	132	4,968	150	..	...	..	....	...	1	86	..	6,784	68	8
9	Florida	107	[illegible]	1,401	380,622	16,186	5	[illegible]	5	3,612	5,785	5	680	..	584	432	2	44	35	620	25	..	...	..	....	...	..	...	..	....	...	9
10	Georgia	110	[illegible]	1,329	373,908	18,011	5	[illegible]	..	4,486	10,217	3	879	..	819	631	2	37	26	264	25	2	151	..	3,487	95	1	25	..	2,477	19	10
11	Idaho	40	[illegible]	415	68,028	3,391	3	[illegible]	..	264	1,697	..	....	..	....	...	1	27	14	141	3	..	...	..	....	...	..	...	..	....	...	11
12	Illinois	219	[illegible]	5,097	912,975	38,444	32	[illegible]	13	16,806	45,296	32	4,244	14	4,227	3,068	6	574	185	3,895	324	1	75	..	1,397	42	2	225	..	4,071	100	12
13	Indiana	101	[illegible]	1,936	313,267	12,223	12	[illegible]	..	6,533	12,271	11	1,690	..	1,873	1,325	2	32	29	317	19	1	50	..	459	26	2	22	..	1,933	6	13
14	Iowa	105	[illegible]	1,461	236,703	8,567	12	[illegible]	9	3,909	12,212	5	677	..	476	553	2	80	25	174	41	1	40	..	483	17	1	8	..	....	...	14
15	Kansas	105	[illegible]	1,232	218,271	8,186	8	[illegible]	2	1,376	7,094	2	541	..	324	428	2	70	46	107	22	4	258	..	6,707	145	..	...	..	....	...	15
16	Kentucky	73	[illegible]	899	208,113	8,180	8	[illegible]	1	4,847	8,948	6	1,239	2	1,676	1,052	2	58	39	672	49	1	75	..	2,853	46	1	38	..	168	23	16
17	Louisiana	72	[illegible]	1,112	291,935	10,691	6	[illegible]	1	3,276	7,845	5	460	..	520	212	..	...	...	...	...	1	60	..	853	29	1	85	..	6,788	57	17
18	Maine	53	[illegible]	699	80,494	2,039	5	[illegible]	2	725	3,733	4	506	..	537	385	1	16	6	35	14	..	...	..	....	...	..	...	..	....	...	18
19	Maryland	49	[illegible]	1,241	261,112	12,896	15	[illegible]	..	4,686	10,987	6	1,560	..	1,378	1,227	..	...	...	...	...	1	24	..	90	1	3	128	..	5,567	60	19
20	Massachusetts	141	[illegible]	3,094	524,011	27,730	31	[illegible]	16	12,188	32,790	21	3,916	1	4,315	2,365	6	404	346	6,952	290	..	...	..	....	...	1	227	..	6,050	132	20
21	Michigan	183	[illegible]	3,524	517,174	21,872	20	[illegible]	7	8,478	20,884	23	3,854	..	4,819	2,989	4	112	101	1,700	75	2	62	..	1,157	32	1	10	..	432	1	21
22	Minnesota	162	[illegible]	2,023	338,148	9,901	12	[illegible]	19	3,995	15,309	15	2,026	..	1,657	1,516	2	80	53	1,198	65	..	...	..	....	...	1	188	..	8,389	163	22
23	Mississippi	90	[illegible]	741	219,528	6,726	5	[illegible]	1	3,052	5,375	1	425	..	521	214	..	...	...	...	...	..	...	..	....	...	..	...	..	....	...	23
24	Missouri	96	[illegible]	1,774	331,788	15,622	16	[illegible]	2	4,220	15,185	5	1,967	..	1,603	1,406	8	468	362	4,914	310	3	415	..	8,886	269	1	65	..	503	45	24
25	Montana	50	[illegible]	571	70,486	2,282	1	[illegible]	..	442	1,929	1	250	..	249	228	..	...	...	...	...	1	85	..	2,316	62	..	...	..	....	...	25
26	Nebraska	91	[illegible]	956	139,206	4,395	5	[illegible]	33	863	5,916	1	200	..	172	141	1	77	18	119	27	1	12	..	317	1	..	...	..	..	...	26
27	Nevada	13	[illegible]	124	18,939	637	1	[illegible]	..	73	428	..	....	..	....	....	..	...	...	...	...	..	...	..	....	...	..	...	..	....	...	27
28	*New Hampshire*	35	[illegible]	478	56,887	2,064	2	[illegible]	1	815	3,018	2	240	..	137	126	..	...	...	...	...	..	...	..	....	...	..	...	..	....	...	28
29	New Jersey	90	[illegible]	2,818	423,605	17,526	20	[illegible]	4	8,049	23,717	16	4,172	..	4,114	2,960	3	433	421	7,761	297	..	...	..	....	...	1	65	..	2,596	35	29
30	New Mexico	44	[illegible]	305	67,349	3,367	3	[illegible]	..	498	1,038	5	558	1	750	442	..	...	...	...	...	2	104	..	1,100	61	..	...	..	....	...	30
31	New York	313	[illegible]	8,789	1,574,400	71,484	57	[illegible]	57	30,536	100,897	53	11,220	14	11,318	8,881	13	890	592	19,364	640	1	28	..	202	12	6	652	..	31,122	317	31
32	North Carolina	129	[illegible]	1,760	376,210	14,655	8	[illegible]	8	3,264	8,651	20	3,084	2	3,982	2,732	1	30	20	93	25	1	50	..	879	32	2	52	..	4,223	36	32
33	North Dakota	41	[illegible]	515	81,683	2,034	2	[illegible]	3	469	2,966	1	350	..	185	231	1	56	6	82	18	..	...	..	....	...	..	...	..	....	...	33
34	Ohio	154	[illegible]	3,572	635,336	23,386	23	[illegible]	3	8,795	27,806	22	3,035	..	3,253	2,302	7	281	176	5,047	184	1	18	..	295	10	..	...	..	....	...	34
35	Oklahoma	111	16,157	1,116	207,265	8,481	9	[illegible]	..	3,526	9,132	5	813	..	936	504	1	22	25	272	9	..	...	..	....	...	..	...	..	....	...	35
36	Oregon	61	8,131	924	162,081	5,373	5	[illegible]	..	2,160	5,859	4	405	..	508	347	2	57	50	229	24	..	...	..	....	...	..	...	..	....	...	36
37	Pennsylvania	231	46,016	5,858	871,308	35,816	42	[illegible]	1	10,837	16,650	16	5,164	..	3,961	3,516	8	431	132	2,156	315	..	...	..	....	...	3	321	8	9,522	233	37
38	Rhode Island	15	5,030	285	71,588	3,900	3	[illegible]	4	918	3,861	4	998	..	2,555	605	1	175	175	5,783	132	..	...	..	....	...	..	...	..	....	...	38
39	South Carolina	62	10,544	831	196,694	6,506	3	[illegible]	..	1,615	5,671	5	862	..	981	684	..	...	...	...	...	..	...	..	....	...	1	15	..	572	4	39
40	South Dakota	46	3,266	496	76,081	2,205	3	[illegible]	..	725	2,494	2	327	..	264	236	..	...	...	...	...	..	...	..	....	...	..	...	..	....	...	40
41	Tennessee	87	25,169	1,136	274,173	15,364	11	[illegible]	4	6,497	8,726	7	1,206	1	1,558	847	..	...	...	...	...	..	...	..	....	...	5	119	..	7,720	55	41
42	Texas	339	52,733	3,359	864,891	35,290	17	[illegible]	..	8,737	16,337	15	2,115	..	3,036	1,561	2	53	31	466	28	5	520	..	8,459	238	2	48	..	2,873	17	42
43	Utah	32	6,709	510	82,135	4,898	1	[illegible]	..	420	1,139	1	100	..	77	65	1	23	23	778	18	..	...	..	....	...	..	...	..	....	...	43
44	Vermont	21	1,177	274	36,224	1,152	4	[illegible]	..	619	2,190	3	175	..	225	130	..	...	...	...	...	..	...	..	....	...	..	...	..	....	...	44
45	Virginia	95	30,961	1,176	398,883	24,406	10	[illegible]	12	7,620	12,950	7	1,548	..	1,401	1,250	..	...	...	...	...	1	18	..	107	4	3	74	..	2,466	26	45
46	Washington	90	19,728	1,632	340,053	14,990	6	[illegible]	..	3,298	9,219	11	1,510	19	2,610	1,252	2	56	35	235	32	..	...	..	....	...	..	...	..	....	...	46
47	West Virginia	63	10,184	793	183,306	8,096	5	[illegible]	6	1,870	4,121	3	1,355	..	1,423	1,101	..	...	...	...	...	..	...	..	....	...	..	...	..	....	...	47
48	Wisconsin	137	14,021	2,293	343,304	10,998	49	[illegible]	18	6,776	16,698	21	2,251	..	1,952	1,797	2	152	30	440	84	..	...	..	....	...	..	...	..	....	...	48
49	Wyoming	24	1,907	239	40,741	1,339	3	[illegible]	..	539	1,668	1	34	..	44	22	..	...	...	...	...	..	...	..	....	...	..	...	..	....	...	49
50	Totals (1945)	4,744	922,549	78,919	15,228,270	665,105	563	657,393	295	218,876	624,349	419	78,774	54	86,186	[illegible]	106	5,656	3,544	77,078	3,741	36	2,963	..	58,391	1,817	42	2,664	8	108,531	1,615	50
51	(1944)	4,833	925,818	76,570	15,060,403	570,331	566	648,745	206	226,393	618,951	453	79,848	38	88,281	[illegible]	107	5,762	3,708	81,964	3,805	39	2,893	6	55,971	1,789	42	2,695	6	102,898	1,489	51
52	(1943)	4,885	850,570	72,839	14,454,638	529,310	575	650,993	210	208,677	619,447	455	79,860	112	91,674	[illegible]	112	6,085	3,800	84,974	3,908	41	3,226	2	61,249	1,920	40	2,421	6	99,948	1,322	52
53	(1942)	4,557	594,260	67,115	11,634,288	405,382	586	646,118	216	214,117	609,773	468	82,372	116	101,526	[illegible]	113	5,903	3,777	80,375	4,171	36	2,896	2	46,723	1,608	42	2,516	10	100,514	1,397	53
54	(1941)	4,518	533,198	61,732	10,616,947	363,614	596	638,144	219	208,592	603,179	477	82,365	99	101,473	[illegible]	116	5,318	3,573	64,874	3,472	39	2,960	14	49,201	1,662	41	2,502	4	97,043	1,388	54
55	(1940)	4,432	462,360	58,073	9,219,496	325,160	602	621,284	161	190,376	590,712	479	78,216	44	90,936	[illegible]	116	5,647	3,380	60,518	3,534	33	2,702	3	41,835	1,501	41	2,470	4	97,853	1,343	55
56	(1939)	4,356	444,947	55,183	9,018,316	307,991	600	606,284	110	190,249	577,103	480	75,972	38	90,615	[illegible]	118	5,553	3,196	59,381	3,552	40	3,215	5	45,085	1,622	41	2,467	..	99,291	1,329	56
57	(1938)	4,286	425,321	52,924	8,515,930	292,870	592	591,822	137	198,703	562,337	493	76,022	41	100,801	[illegible]	120	5,969	3,361	66,145	3,699	37	2,992	2	42,666	1,482	38	1,992	..	90,863	1,080	57
58	(1937)	4,215	412,091	51,668	8,319,773	288,280	579	570,616	124	195,624	516,906	508	76,751	33	101,839	[illegible]	114	5,466	3,487	59,949	3,480	36	2,835	..	41,028	1,519	39	1,946	3	95,241	1,116	58
59	(1936)	4,207	402,605	49,604	7,755,818	271,658	584	518,952	109	181,936	524,093	506	73,692	36	99,234	[illegible]	125	6,402	3,846	67,925	4,065	44	3,159	10	41,862	1,536	43	2,118	32	99,273	1,113	59
60	(1935)	4,257	406,174	48,757	6,875,182	261,294	592	529,311	132	173,009	507,269	496	70,373	58	86,113	[illegible]	121	6,141	3,825	66,693	3,582	52	3,421	11	41,432	1,676	41	2,263	11	97,181	1,080	60
61	(1934)	4,198	393,425	47,850	6,291,556	237,395	614	513,815	84	172,115	488,481	495	70,063	..	82,455	[illegible]	130	7,025	4,131	76,980	4,617	113	5,575	313	69,609	2,123	55	2,793	19	103,720	1,265	61
62	(1933)	4,237	380,713	47,008	6,071,512	231,692	621	498,955	..	170,833	474,787	497	70,682	..	84,327	[illegible]	134	7,976	4,660	82,250	4,857	118	5,923	364	69,748	2,620	56	2,622	20	108,565	1,195	62
63	(1932)	4,305	395,513	46,588	6,303,573	250,495	624	479,548	..	169,851	455,173	512	69,676	..	93,112	[illegible]	136	7,559	4,696	93,459	4,810	122	6,078	390	70,715	2,883	58	2,718	29	116,527	1,357	63
64	(1931)	4,309	384,333	45,431	6,321,861	247,560	587	451,245	..	....	427,135	509	65,923	..	80,562	[illegible]	145	8,078	5,032	91,496	4,737	112	6,476	438	93,115	3,118	61	2,774	27	113,762	1,414	64
65	(1930)	4,302	371,609	43,911	....	240,384	561	437,919	..	....	415,012	515	65,940	..	......	[illegible]	151	6,527	4,486	......	4,126	155	6,875	471	......	3,016	73	2,702	11	....	1,433	65
66	(1929)	4,268	357,034	42,715	....	231,009	572	414,396	..	....	395,407	502	61,310	..	......	[illegible]	146	5,434	4,023	......	3,412	152	7,004	479	......	3,824	68	2,646	12	....	1,263	66
67	(1928)	4,361	364,337	38,330	....	....	553	394,268	..	....	....	508	62,113	..	......	......	161	5,912	3,621	......	.....	169	7,290	419	......	.....	77	2,879	21	....	.....	67
68	(1927)	4,322	345,364	......	....	228,084	563	373,364	..	....	349,667	508	63,170	..	......	50,784	178	5,747	.....	......	3,695	168	7,039	...	......	3,712	77	2,832	..	....	1,502	68

TABLE 2.—HOSPITAL FACILITIES BY STATES AND BY TYPE OF SERVICE—(Continued)

Marginal No.		Children's					Orthopedic					Isolation					Convalescent and Rest					Hospital Departments of Institutions					All Other Hospitals					Totals					Marginal No.
		Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	Hospitals	Beds	Bassinets	Patients Admitted	Average Census	
1	Alabama	1	50	..	1,008	41	1	50	..	160	38	1	250	..	8,319	150	1	16	..	249	8	3	110	..	2,425	41	1	18	1	34	1	109	23,833	1,108	253,535	18,248	1
2	Arizona	..	...	..	....	...	1	50	..	205	43	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	67	8,871	500	91,144	5,324	2
3	Arkansas	1	75	8	685	45	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	1	100	4	4,642	76	65	17,357	590	162,753	13,706	3
4	California	6	171	..	9,038	361	2	115	..	2,523	100	1	16	2	103	3	10	1,887	..	10,745	1,630	9	740	1	14,231	473	3	353	..	1,579	309	415	150,502	5,070	1,431,643	120,125	4
5	Colorado	1	200	15	7,777	175	..	...	..	....	...	1	80	..	672	20	2	925	..	10,044	577	4	125	..	1,825	56	..	...	..	....	...	102	24,990	877	212,132	20,071	5
6	Connecticut	..	...	..	....	...	1	180	..	142	131	..	...	..	....	...	2	143	..	969	94	7	631	9	3,748	303	6	445	2	943	326	82	23,081	1,313	207,001	19,214	6
7	Delaware	..	...	..	....	...	1	85	..	111	38	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	18	3,850	232	31,009	3,109	7
8	District of Columbia	1	250	..	6,010	100	..	...	..	....	...	..	...	..	....	...	1	22	..	65	15	3	300	..	2,737	167	1	180	..	39	165	29	17,817	857	140,297	15,822	8
9	Florida	..	...	..	....	...	3	167	..	643	103	1	300	..	5,242	200	3	125	..	709	64	2	67	..	616	17	2	95	..	886	65	130	32,911	1,444	393,654	22,877	9
10	Georgia	1	40	4	942	33	2	189	..	892	161	1	236	6	7,076	16	1	30	..	175	30	2	103	..	1,942	85	2	113	..	3,070	69	132	37,760	1,365	399,547	30,292	10
11	Idaho	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	1	1,165	2	3,262	806	..	...	..	....	...	..	...	..	....	...	45	[illegible]	431	71,695	5,807	11
12	Illinois	3	382	..	3,003	199	4	175	..	513	125	3	664	..	7,176	203	14	575	..	2,656	397	9	3,076	15	8,599	2,398	3	448	..	1,780	308	328	[illegible]	5,324	907,998	90,901	12
13	Indiana	..	...	..	....	...	..	...	..	....	...	1	147	..	1,545	75	3	375	..	7,234	219	6	448	..	3,471	150	5	3,095	..	1,241	2,979	143	[illegible]	1,965	337,873	29,293	13
14	Iowa	..	...	..	....	...	..	...	..	....	...	2	83	1	553	19	1	18	..	70	14	4	275	..	892	89	1	158	..	318	108	134	[illegible]	1,496	213,578	21,620	14
15	Kansas	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	5	420	1	3,985	125	1	40	..	212	1	127	[illegible]	1,281	230,982	16,001	15
16	Kentucky	1	70	..	1,716	53	2	125	..	752	111	1	145	..	2,331	62	1	100	..	2,438	68	2	170	..	1,876	97	1	100	..	17	95	99	[illegible]	941	227,789	18,784	16
17	Louisiana	..	...	..	....	...	1	60	..	105	38	..	...	..	....	...	1	33	..	129	9	1	110	..	1,069	63	1	538	..	64	377	89	[illegible]	1,113	301,739	19,321	17
18	Maine	1	100	..	398	70	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	64	[illegible]	607	82,189	7,141	18
19	Maryland	..	...	..	....	...	2	233	..	613	164	1	110	2	1,039	51	4	317	..	341	276	3	96	..	953	30	1	152	..	24	120	85	[illegible]	1,246	275,803	25,821	19
20	Massachusetts	5	503	21	8,552	401	5	533	..	781	372	4	168	25	734	34	3	102	..	219	59	8	626	6	5,963	452	5	477	..	1,589	370	230	[illegible]	3,512	571,354	65,007	20
21	Michigan	1	215	..	1,573	132	2	152	4	478	100	6	321	11	8,418	132	5	351	..	973	172	5	352	..	1,601	281	5	1,809	..	5,038	1,626	257	[illegible]	3,647	579,931	57,296	21
22	Minnesota	1	65	..	2,029	58	4	417	..	1,095	295	1	19	..	5	1	5	375	..	1,946	244	4	230	..	1,111	81	2	52	..	1,665	17	209	[illegible]	2,095	301,238	27,650	22
23	Mississippi	..	...	..	....	...	..	...	..	....	...	1	228	..	6,697	133	..	...	..	....	...	1	46	..	266	4	..	...	..	....	...	98	[illegible]	745	230,064	12,482	23
24	Missouri	2	330	..	1,937	262	2	160	..	170	85	1	129	6	5,253	103	2	108	..	208	84	6	1,462	..	3,081	1,000	3	212	..	2,425	187	145	[illegible]	2,144	368,288	31,558	24
25	Montana	..	...	..	....	...	1	20	15	208	28	1	25	..	214	7	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	55	[illegible]	686	70,945	4,536	25
26	Nebraska	..	...	..	....	...	1	110	..	656	88	..	...	..	....	...	1	46	..	172	20	2	43	12	479	10	..	...	..	....	...	103	[illegible]	1,019	141,984	10,628	26
27	Nevada	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	14	[illegible]	121	19,012	1,065	27
28	New Hampshire	..	...	..	....	...	..	...	..	....	...	1	61	..	127	6	..	...	..	....	...	1	53	..	689	10	..	...	..	....	...	41	[illegible]	470	58,655	5,224	28
29	New Jersey	1	70	..	1,830	33	7	523	..	2,264	309	5	811	..	3,527	218	5	305	..	740	246	7	313	..	3,338	148	8	944	3	952	851	163	[illegible]	3,246	458,806	46,340	29
30	New Mexico	..	...	..	....	...	1	100	..	174	64	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	55	[illegible]	806	69,871	4,972	30
31	New York	3	210	..	1,519	107	12	1,349	..	5,625	1,084	7	1,216	2	9,681	535	15	1,125	..	7,146	724	17	3,660	..	13,120	2,861	22	2,932	25	16,220	2,860	549	[illegible]	9,479	1,720,162	190,557	31
32	North Carolina	1	35	5	1,348	25	2	178	..	401	168	2	325	4	8,861	234	2	413	..	2,906	345	3	251	..	1,670	56	..	...	..	....	...	171	[illegible]	1,709	403,850	26,959	32
33	North Dakota	..	...	..	....	...	..	...	..	....	...	1	64	1	140	5	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	46	[illegible]	525	82,559	5,254	33
34	Ohio	3	150	..	11,101	301	8	132	..	313	77	..	...	..	....	...	3	232	..	408	193	11	850	..	7,929	445	7	2,854	..	3,309	2,647	234	[illegible]	3,751	678,849	57,171	34
35	Oklahoma	..	...	..	....	...	3	128	..	3,347	83	1	28	..	1,018	2	..	...	..	....	...	4	187	..	3,256	50	1	350	..	2,459	300	135	[illegible]	1,111	222,079	18,561	35
36	Oregon	..	...	..	....	...	1	60	..	365	39	2	165	2	787	58	..	...	..	....	...	3	110	..	1,427	35	2	42	..	413	24	83	[illegible]	970	167,970	11,730	36
37	Pennsylvania	5	190	..	10,084	329	4	195	..	532	280	5	1,482	12	5,600	359	12	503	30	2,939	427	12	663	..	6,060	439	16	2,035	..	5,618	1,442	354	[illegible]	6,041	[illegible]	89,815	37
38	Rhode Island	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	2	118	..	83	100	25	[illegible]	401	[illegible]	8,607	38
39	South Carolina	..	...	..	....	...	2	78	..	423	56	1	200	..	1,103	106	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	74	[illegible]	831	[illegible]	13,027	39
40	South Dakota	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	1	42	..	75	30	2	61	..	489	21	..	...	..	....	...	54	[illegible]	486	[illegible]	1,095	40
41	Tennessee	1	75	25	1,291	39	5	216	..	2,313	157	..	...	..	....	...	..	...	..	....	...	3	928	..	854	527	1	20	..	338	2	120	[illegible]	1,166	[illegible]	25,717	41
42	Texas	2	143	..	2,026	17	1	75	..	563	54	3	340	..	8,528	217	1	125	..	82	120	5	428	..	3,931	182	3	2,862	..	2,038	2,771	395	[illegible]	3,393	[illegible]	56,862	42
43	Utah	1	25	..	61	18	1	20	..	20	20	1	50	..	850	15	..	...	..	....	...	..	...	..	....	...	1	670	..	87	613	39	[illegible]	563	[illegible]	6,786	43
44	Vermont	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	1	12	..	87	4	..	...	..	....	...	29	[illegible]	274	[illegible]	3,476	44
45	Virginia	..	...	..	....	...	1	120	..	280	87	2	223	13	6,119	156	..	...	..	....	...	5	218	..	2,151	122	2	376	..	951	215	126	[illegible]	1,501	[illegible]	39,216	45
46	Washington	..	...	..	....	...	2	149	..	1,457	122	2	170	..	1,533	57	1	11	..	5	9	3	235	..	2,00[illegible]	111	..	...	..	....	...	117	[illegible]	1,686	[illegible]	25,772	46
47	West Virginia	1	312	..	37	201	3	240	..	750	161	..	...	..	....	...	..	...	..	....	...	2	83	8	1,633	45	1	134	5	3,354	61	80	[illegible]	812	[illegible]	13,910	47
48	Wisconsin	1	150	..	4,366	122	..	...	..	....	...	3	330	..	1,615	66	1	147	..	330	120	4	169	..	2,569	115	1	83	..	124	80	210	[illegible]	2,341	[illegible]	30,080	48
49	Wyoming	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	..	...	..	....	...	28	[illegible]	239	[illegible]	3,029	49
50	Totals (1945)	44	4,770	81	90,097	3,495	83	6,679	10	29,154	4,781	63	8,406	87	99,399	3,223	102	9,556	82	57,385	7,009	168	[illegible]	52	112,211	11,093	111	21,814	40	[illegible]	10,222	6,511	[illegible]	83,131	16,257,402	1,405,217	50
51	(1944)	44	4,159	39	85,243	3,0[illegible]6	84	6,561	10	29,435	4,073	61	8,300	67	48,387	2,864	109	13,825	34	61,548	7,093	216	[illegible]	97	153,057	15,927	57	6,252	10	[illegible]	5,531	6,611	[illegible]	80,791	16,036,848	1,299,474	51
52	(1943)	40	4,194	19	84,104	2,705	84	7,025	..	31,671	5,020	55	8,313	44	49,570	3,219	126	12,453	42	34,847	8,211	203	[illegible]	36	141,638	13,280	39	3,884	4	[illegible]	3,450	6,655	[illegible]	77,134	15,374,698	1,257,124	52
53	(1942)	43	4,314	41	84,750	2,903	70	7,313	29	36,178	5,510	52	6,279	33	37,936	2,087	139	9,793	40	35,020	8,041	194	[illegible]	61	143,865	12,300	36	3,501	2	[illegible]	2,840	6,345	[illegible]	71,418	12,545,610	1,120,028	53
54	(1941)	52	6,067	347	117,128	4,130	82	7,382	10	38,270	5,691	52	6,356	21	36,399	2,093	136	9,630	36	38,862	7,967	219	[illegible]	118	174,335	20,593	30	3,122	..	[illegible]	2,673	6,358	[illegible]	66,163	11,596,188	1,087,039	54
55	(1940)	46	4,781	137	92,234	3,263	84	7,602	15	34,294	5,805	57	7,350	25	40,313	3,114	142	8,721	35	36,594	6,776	226	[illegible]	62	150,436	15,318	33	3,230	..	[illegible]	2,582	6,291	[illegible]	61,939	10,087,548	1,020,171	55
56	(1939)	48	5,151	146	95,137	3,524	82	7,700	..	36,891	5,732	60	7,100	6	30,279	2,655	139	8,821	36	34,191	6,948	232	[illegible]	40	160,927	18,200	30	2,796	4	[illegible]	2,320	6,226	[illegible]	58,761	9,879,214	936,183	56
57	(1938)	52	5,410	115	93,420	3,761	73	7,125	..	33,780	5,620	54	6,145	17	34,017	2,511	121	5,846	31	36,265	4,305	235	[illegible]	112	142,714	14,730	63	10,925	4	[illegible]	7,060	6,166	[illegible]	56,747	9,421,075	965,706	57
58	(1937)	51	5,389	111	89,584	3,711	73	6,880	10	33,015	5,563	56	6,187	23	37,295	2,033	120	5,560	38	29,411	3,965	240	[illegible]	61	144,189	14,498	65	9,000	8	[illegible]	7,933	6,128	[illegible]	55,566	9,221,517	911,430	58
59	(1936)	52	5,279	150	89,916	3,422	71	6,333	10	30,499	5,127	61	6,896	84	37,053	2,886	130	6,0[illegible]9	38	32,504	4,191	282	[illegible]	299	157,227	17,831	84	10,033	17	[illegible]	8,428	6,189	[illegible]	51,225	8,646,885	908,516	59
60	(1935)	51	4,874	118	83,015	3,115	68	6,394	12	28,280	5,010	66	7,384	70	47,004	3,301	135	6,233	84	28,218	4,437	275	[illegible]	234	143,434	13,859	89	11,778	48	[illegible]	10,240	6,246	[illegible]	53,310	7,717,154	875,510	60
61	(1934)	58	5,380	146	87,571	3,629	69	6,389	12	28,076	5,003	71	7,430	45	38,949	2,934	125	5,456	45	24,083	3,580	312	[illegible]	310	135,272	14,590	94	8,132	35	[illegible]	6,162	6,334	[illegible]	53,026	7,147,416	870,098	61
62	(1933)	58	5,186	170	90,307	3,6[illegible]8	69	6,461	10	26,570	4,961	71	6,759	16	40,604	2,801	130	5,489	50	27,383	3,802	343	[illegible]	152	131,074	12,991	103	8,368	18	[illegible]	6,613	6,437	[illegible]	52,461	7,037,982	810,271	62
63	(1932)	58	5,331	172	83,108	3,629	69	6,582	..	31,862	5,229	79	7,314	33	41,871	2,858	132	5,867	53	25,029	3,954	393	[illegible]	133	131,021	15,131	71	4,193	12	[illegible]	3,104	6,562	[illegible]	52,232	7,228,151	808,145	63
64	(1931)	60	5,463	273	83,110	3,823	68	6,769	..	37,842	5,131	80	7,093	50	40,210	2,817	131	6,123	43	28,628	4,429	434	[illegible]	137	131,291	16,219	76	4,107	19	[illegible]	2,845	6,613	[illegible]	51,494	7,155,970	775,396	64
65	(1930)	62	5,597	258	......	3,756	64	6,346	..	......	5,201	88	7,608	44	......	2,490	162	7,374	77	......	5,034	460	[illegible]	109	....	17,855	126	10,140	95	......	7,013	6,719	[illegible]	49,581	....	763,7[illegible]2	65
66	(1929)	61	5,443	218	......	3,5[illegible]0	61	5,943	..	......	4,763	86	7,422	29	......	2,677	149	6,474	73	......	4,588	473	[illegible]	170	....	15,584	127	9,707	70	......	6,941	6,665	[illegible]	47,039	....	720,768	66
67	(1928)	65	5,0[illegible]9	377	......	.....	61	5,713	..	......	.....	92	8,479	113	......	.....	171	7,347	69	......	.....	529	[illegible]	161	....	......	99	7,096	9	......	.....	6,852	[illegible]	43,313	....	....	67
68	(1927)	58	5,050	...	......	3,457	62	5,595	..	......	4,150	93	8,895	...	......	3,264	159	8,143	..	......	5,589	530	[illegible]	...	....	12,153	81	6,169	..	......	5,139	6,807	[illegible]	......	....	671,9[illegible]2	68

showed a slight decrease, but the federal division reported an increase of 13,147. The total gain in relation to the previous year was 22,483. In measuring the volume of service in mental hospitals it is necessary also to take into consideration the average daily census or patient load. Last year, for example, the mental hospitals gave daily care to 624,349 patients, a total far in excess of the annual number of admissions in these institutions.

The tuberculosis sanatoriums show a continued decrease in the number of patients admitted as evidenced by the present report of 86,186 admissions as compared with 88,281 in 1944. Increases occurred in the federal, municipal and city-county classifications but reductions in other divisions resulted in a net loss of 2,095. Other special hospitals reported gains in both the governmental and nongovernmental groups, but services classified as departments of institutions showed a considerable reduction in hospital admissions last year. Comparative data in relation to previous years will be found in tables 1 and 2.

AVERAGE DAILY CENSUS

The enormous volume of service rendered by hospitals in the United States is likewise reflected in the daily patient load, which averaged 1,405,247 in 1945 exclusive of newborn infants. This average, which exceeds any previous report, represents the unprecedented total of 512,915,155 treatment days. For the first time also the daily census in general hospitals exceeded the patient load of the mental institutions, the latter reporting an average of 624,349 as compared with 665,105 in the general hospital section. In the previous year the corresponding figures were 618,951 and 570,331 respectively. All general hospital groups had an increased daily census except the institutions classified as corporations unrestricted as to profit. Gains were relatively small in most units, but the federal general hospitals reported an increase of 78,494 in comparison with 1944. It may be noted that the nongovernmental general hospitals had an average daily census of 244,245, the federal general hospitals 333,137, and the other governmental general hospitals 87,723. The number of treatment days in the general hospital group was 242,763,325 or 47.3 per cent of the total patient days in all registered hospitals.

The average patient load in the mental hospitals showed a net increase of 5,398 in 1945. Most of this gain occurred in the federal group although slight increases were also noted in the state, city-county, and proprietary classifications. With 44.4 per cent of the total hospital census the mental institutions had 227,887,385 treatment days including 193,922,310 in state hospitals and 28,605,415 in other governmental groups. The tuberculosis sanatoriums had a daily average of 59,767 patients as compared with 63,025 in 1944. Reductions occurred in both governmental and nongovernmental groups, but there were individual increases of 390 in the federal hospitals and 39 in the sanatoriums operated under individual or partnership control. Other special hospitals reported a combined census of 44,933, an increase of 13,693 in comparison with the previous year. Hospital departments of institutions, however, showed a net decrease of 4,834. The governmental hospitals with 78 per cent of the beds and 39 per cent of the admissions have 79.3 per cent of the total daily patient load. In the nongovernmental group the church and other nonprofit hospitals have an average of 258,251 or 18.4 per cent of the daily census in all hospitals. The corresponding figures for the proprietary group are 32,582 and 2.3 per cent.

PERCENTAGE OF BEDS OCCUPIED

The accompanying table on average occupancy rates in hospitals classified by control and type of service gives comparative data for 1942, 1944 and 1945. In the present survey increased bed occupancy was noted in all governmental groups except the state and county institutions which remained at their previous levels of 93.7 and 75.9 per cent, respectively. The municipal hospitals increased from 72.1 to 72.9 and the city-county institutions from 66.7 to 69.3. The most striking change was in the federal classification, however, where the utilization of hospital beds advanced from an average of 55.1 per cent in 1944 to 71.7 in 1945. As a group the governmental hospitals showed an occupancy rate of 82.1 as compared with 75.1 per cent in the previous year. In 1944, it should be noted, decreased rates occurred in all governmental divisions except in the state institutions where over 90 per cent of the beds are devoted to psychiatric care.

Percentage of Beds Occupied

	1942	1944	1945
According to Ownership or Control:			
Federal	66 6	55.1	71.7
State	93.4	93.7	93.7
County	77.7	75.9	75.9
City	76.9	72.1	72.9
City-county	70.5	66.7	69.3
Total governmental	84.5	75.1	82.1
Church	74.9	79.6	81.6
Nonprofit associations	74.5	73.8	75.4
Total nonprofit	74.7	76.1	77.9
Individual and partnership	56 1	62.2	57.7
Corporations (profit unrestricted)	65.3	74.1	73.0
Total proprietary	69.4	67.5	63.9
Total nongovernmental	72.7	75.0	76.0
According to Type of Service:			
General	68.2	61.6	72.0
Nervous and mental	94.4	95.4	94.9
Tuberculosis	85.0	78.9	75.8
Maternity	70.7	66.0	66 1
Industrial	55.5	61.8	62.3
Eye, ear, nose and throat	54.9	55.3	69.6
Children's	67.4	69.4	73.2
	75.4	68.1	71.5
	33.2	34.5	38.3
	82.1	57.8	73.3
Hospital departments of institutions	66.4	65.0	62.6
All other hospitals	81.1	88.5	88.1
Total all hospitals	81.4	75.1	80.8

The average occupancy in nongovernmental hospitals increased from 75 to 76 per cent. Both the proprietary and the nonprofit organizations showed an increase in the previous report, but in the present survey the expansion of occupancy rates was limited to the latter group. The church related hospitals increased from 79.6 to 81.6 per cent, the other nonprofit associations from 73.8 to 75.4.

In the general hospitals, the percentage occupancy advanced from 61.6 to 72.0, paralleling the expansion of the federal group, where increased occupancy rates were related mainly to general hospital beds. A continued decrease was noted in the tuberculosis sanatoriums and there was also a slight decrease in the nervous and mental group. Increased rates, however, were observed in the maternity, industrial, eye, ear, nose and throat, children's, orthopedic, isolation and convalescent and rest hospitals. The lowest rate, 38.3 per cent, occurred in the isolation hospitals, where bed reserves are usually maintained in relation to seasonal needs. For the total hospital group the average occupancy was 80.8 per cent as compared with 75.1 in 1944. This new rate approaches the level of 1942 when 81.4 per cent was reported.

In the study of percentage occupancy it is also of interest to consider the actual utilization of hospital beds in direct relation to population. For this purpose the accompanying table has been prepared showing the number and utilization of hospital beds in the United States per 1,000 population. Using the data obtained in the present survey and the population estimate of the U. S. Census Bureau, July 1, 1945 (total population, excluding armed forces overseas) it was found that for the period represented in this report the registered hospitals in the United States had 13.2 beds per 1,000 population. These were distributed as follows: general hospitals 7 beds per 1,000, nervous and mental institutions 5, tuberculosis sanatoriums 0.6 and other hospitals 0.6. The actual utilization of hospital beds, however, as determined in relation to the average daily census was 10.6 beds per 1,000 population, 5 in the general hospitals, 4.7 in the mental institutions, 0.4 in the tuberculosis sanatoriums and 0.4 in other groups.

Supply and Utilization of Hospital Beds in the United States per 1,000 Population *

1945

Type	Number of Hospitals	Number of Beds	Beds per 1,000 Population	Average Daily Census	Average Daily Bed Occupancy per 1,000 Population
General	4,744	922,549	7.0	665,105	5.0
Nervous and mental	563	657,393	5.0	624,349	4.7
Tuberculosis	449	78,774	0.6	59,767	0.4
Other hospitals	755	80,228	0.6	56,026	0.4
Totals	6,511	1,738,944	13.2	1,405,247	10.6
(Nonfederal general hospitals)	(4,135)	(446,474)	(3.5)	(331,963)	(2.6)

* Population estimates (U. S. Census Bureau) July 1, 1945: Nonfederal general hospitals compared with estimated civilian population; other groups compared with estimated total population, excluding armed forces overseas.

In the general hospital group it should be noted that the federal institutions have over half of the beds and more than 50 per cent of the daily patient load. Taking only the nonfederal general hospitals, therefore, and comparing their bed capacity and daily average with the estimated civilian population (U. S. Census Bureau, July 1, 1945) a ratio of 3.5 beds per 1,000 has been found with the actual daily utilization of 2.6.

AVERAGE LENGTH OF STAY

Comparative data for 1943, 1944 and 1945 have been included in the table showing average length of stay per patient in general hospitals. In the governmental group it will be noted that slight reductions occurred in the proprietary and church hospitals, while the other nonprofit associations remained at the level of the previous two years. A more noticeable change will be found in the governmental classification where the average stay increased from 20.3 to 26.2 days. Here the city-county institutions are involved to some extent but the principal advance is in the federal group where a sharp increase could be anticipated with the return of the wounded for longer periods of hospitalization. The general hospitals as a group show an increase of two days in the average length of stay as compared with 1944.

BIRTHS IN HOSPITALS

The use of hospital facilities for maternity care reached its highest point in 1945, when 1,969,667 live births were reported in the hospitals registered by the American Medical Association. The previous high was 1,924,591 in 1943. Last year the increase in hospital births was 49,691 whereas the previous year showed a decrease of 4,615. In 1942 and 1943, however, increases of 265,659 and 253,992 were reported. The accompanying table classified by control and type of service gives comparative data for the last three years and illustrates also the total increase in hospital births since 1929. In the twelve month period represented in this report, the hospital birth rate may be regarded as the equivalent of 1 live baby every 16 seconds.

Average Length of Stay per Patient in General Hospitals, 1943, 1944 and 1945

	1943	1944	1945
According to Ownership or Control:			
Federal	20.3 days	22.0 days	31.1 days
State	18.1 days	18.4 days	18.7 days
County	19.5 days	19.2 days	19.1 days
City	14.9 days	14.5 days	14.4 days
City-county	11.5 days	10.9 days	13.4 days
All governmental general	19.0 days	20.3 days	26.2 days
Church	9.7 days	9.7 days	9.6 days
Other nonprofit associations	9.9 days	9.9 days	9.9 days
All nonprofit general	9.8 days	9.8 days	9.8 days
Individual and partnership	6.9 days	6.9 days	6.6 days
Corporations (profit unrestricted)	8.3 days	8.6 days	7.8 days
All proprietary general	7.5 days	7.6 days	7.1 days
All nongovernmental general	9.5 days	9.6 days	9.5 days
All general hospitals	13.4 days	13.9 days	15.9 days

The governmental hospitals reported 315,149 births in 1945, the church related hospitals 665,153, the other nonprofit associations 793,220 and the proprietary institutions 196,145. The comparative figures for 1944 were 293,424, 652,761, 773,489 and 200,302 respectively. Thus it will be seen that a reduction occurred in the proprietary group, which involved both the individual and partnership hospitals and the corporations unrestricted as to profit. The total increase in the governmental hospitals was 21,725 including 14,175 in the federal group. The nongovernmental hospitals

Births in Hospitals According to Ownership or Control and According to Type of Service

	1929	1943	1944	1945
According to Ownership or Control:				
Federal	2,206	29,934	47,699	61,874
State	9,125	31,796	31,783	32,075
County	17,527	73,104	73,230	75,433
City	45,787	119,016	123,258	125,011
City-county	8,896	19,751	17,454	20,756
Total governmental	83,541	273,601	293,424	315,149
Church	209,726	656,367	652,761	665,153
Fraternal	1,730	......	......	......
Nonprofit associations	.....	795,184	773,489	793,220
Industrial	4,327	......	......	......
Independent	283,126	......	......	......
Total nonprofit	.....	1,451,551	1,426,250	1,458,373
Individual and partnership	39,436	116,144	123,296	122,582
Corporations (profit unrestricted)	.....	83,205	77,006	73,563
Total proprietary	.....	199,349	200,302	196,145
Total nongovernmental	538,355	1,650,900	1,626,552	1,654,518
According to Type of Service:				
General	566,177	1,856,204	1,856,650	1,897,772
Maternity	53,019	66,192	61,351	69,115
Children's	862	......	......	......
	277	172	152	175
	1,561	2,023	1,823	1,315
Total births in all hospitals	621,896	1,924,591	1,919,976	1,969,667

with a total of 1,654,518 newborn infants had 84 per cent of the hospital births, the governmental institutions 16 per cent.

In the classification of hospitals according to type of service it is noted that the births in general hospitals increased in the last year from 1,856,650 to 1,907,772. A decrease of 906 occurred in the maternity hospitals and 525 in other groups. The general hospitals had 96.8 per cent of the births, the maternity hospitals 3.1 per cent and the other hospitals less than 0.1 per cent. For convenience of reference a table has also been included showing hospital births classified by states.

Hospital Births Classified by States

	Births		Births
Alabama	26,319	Nebraska	19,117
Arizona	10,657	Nevada	2,105
Arkansas	14,178	New Hampshire	8,349
California	141,863	New Jersey	66,589
Colorado	18,919	New Mexico	6,945
Connecticut	32,406	New York	207,935
Delaware	5,064	North Carolina	45,965
District of Columbia	23,290	North Dakota	10,476
Florida	32,710	Ohio	111,015
Georgia	35,216	Oklahoma	26,759
Idaho	8,804	Oregon	21,378
Illinois	121,640	Pennsylvania	142,296
Indiana	55,587	Rhode Island	12,351
Iowa	32,917	South Carolina	20,219
Kansas	26,427	South Dakota	8,864
Kentucky	23,833	Tennessee	30,701
Louisiana	32,263	Texas	96,354
Maine	11,614	Utah	14,112
Maryland	29,060	Vermont	5,175
Massachusetts	69,634	Virginia	35,027
Michigan	94,348	Washington	39,740
Minnesota	46,872	West Virginia	17,795
Mississippi	15,704	Wisconsin	53,101
Missouri	44,586	Wyoming	4,303
Montana	9,085		
		Total	1,969,667

NURSING PERSONNEL IN HOSPITALS

The detailed study of nursing personnel reported in The Journal, March 31, 1945, was again carried out in the present survey. All registered hospitals were requested to supply the following information with reference to schools of nursing education and professional and auxiliary nursing personnel:

Professional Nursing Personnel (Number of *graduate* nurses)

1. Supt. and asst. supt. of hospital (nurse)....... ....
2. Supt. and assist. supt. of nurses and/or nursing school ....
3. Full time instructors........................ ....
4. Supervisors and asst. supervisors (night and day) ....
   (Charge of more than one ward unit)
5. Head nurses and asst. head nurses............ ....
   (Charge of one ward unit only)
6. Graduate general duty nurses (full time)...... ....
7. Graduate general duty nurses (part time)...... ....
8. Private duty nurses now in hospital........... ....
9. Other graduate nurses not classified above.... ....
10. Total graduate nurses........................ ....
   (Check that each nurse is listed in *one* classification only)

Auxiliary Nursing Personnel: Practical nurses, attendants etc. (spend major time assisting with nursing duties)..............

Volunteer nurses' aids...... Orderlies...... Ward maids......

Schools of Nursing

Do you have a state accredited school of nursing? If so, give number of student nurses now enrolled...... Do you conduct a state accredited school offering an affiliating course only?...... Number of students in this course......

The information compiled from this study is presented in tabular form under the headings of Nursing Personnel and Schools of Nursing Education, and Professional and Auxiliary Personnel. Included in the latter table are comparative data on beds, average census and admissions so that personnel ratios may be computed in relation to the various groups and hospitals represented. These indicate that in the latter part of 1945 the registered hospitals were employing 144,724 graduate nurses exclusive of 25,277 private duty nurses. The corresponding figures for 1944 were 125,458 and 23,949. Of the regular nursing staff, 8,488 were classified as administrative personnel, that is, superintendents and assistant superintendents of hospitals, nurses and/or nursing schools, 4,174 as full time instructors, 18,786 as supervisors and assistant supervisors, 26,769 as head nurses and assistant head nurses, 68,902 as full time general duty nurses, 11,826 as part time general duty nurses and 5,779 as unclassified. In comparison with 1944 there were fewer nurses in the unclassified group, but all other classifications of professional nursing personnel were increased in number. It should be noted, however, that the data on superintendents of hospitals, nurses and nursing schools in the 1944 report did not include assistant superintendents and therefore should not be compared directly with the administrative nursing personnel listed in the present survey. Increases were noted in all auxiliary nursing groups except in relation to practical nurses and attendants whose numbers decreased by approximately 8,000.

SCHOOLS OF NURSING EDUCATION

In connection with the present survey, state accredited schools of nursing reported a student enrolment of 130,909 as compared with 129,879 in 1944 and 110,222 in 1943. The number of schools accredited by the respective state boards of nurse examiners total 1,250 exclusive of the state accredited schools which offer an affiliating course only. The latter, comprising a group of 171 schools, accommodated 11,238 affiliated student nurses in 1945.

In the listing of accredited schools in the Hospital Register, two symbols are employed to differentiate between institutions conducting schools and those which supply training on an affiliated basis. The circular symbol (°) refers to hospitals which provide acceptable supplementary training in a limited field as, for example, pediatrics, psychiatry, tuberculosis or contagious diseases. The diamond symbol (◊), however, is applied to accredited schools of nursing operated by hospitals individually or under joint hospital and college or university sponsorship.

TECHNICAL PERSONNEL IN HOSPITALS

Hospital reports on technical personnel employed have been tabulated by states and included in The Journal on March 27, 1937, March 28, 1942, March 27, 1943, March 25, 1944 and March 31, 1945. Totals for previous years are appended to the current table for comparison. The variations in employment of technical personnel in hospitals during the war years are clearly demonstrated if the 1941 totals are used for comparison. During the war civilian and federal hospitals have experienced large increases in the number of patients admitted as demonstrated elsewhere in this issue. This is reflected in the increased employment of technical personnel to aid in establishing diagnoses, administering treatments or caring for the patients as well as keeping the necessary records. It is noteworthy that two changes occurred in hospital employment of technical personnel during 1945. There was a reduction of part time employment in all categories included in the accompanying table. Increase in full time employment was reported in those classifications in which personnel were particularly difficult to acquire during the war years. Thus the largest net increase was reported in the occupational therapist group, which represented an increase of 636 additional full time workers with only 24 fewer part time employees. Increased reliance on full time physical therapists was indicated by hospital reports this year which included 496 more full time physical therapists than last year with a reduction of 164 on a part time basis.

Medical stenographers totaled 775 more full time and 466 fewer part time than last year but since many of these individuals are employed in record departments the question arises whether or not a more accurate type of reporting is influencing these totals. A net increase of nurse anesthetists was experienced in 1945. Unfortunately the 1941 survey did not include nurse anesthetists and therefore figures are not available for a peacetime year.

The remaining categories demonstrate a net reduction was reported in the current survey. Changes in the number of clinical laboratory technicians in hospitals were not significant but a real reduction of 310 x-ray technicians and 262 pharmacists was recorded. These decreases are the first to have occurred since 1941 and represent 3 per cent of the 1944 peak employment of x-ray technicians in hospitals and 6 per cent of pharmacists reported in the same year.

In the current survey a reduction of 67 full time and 188 part time medical record librarians was reported, but this might easily reflect an alteration in the classification of personnel in record departments.

NURSING PERSONNEL AND SCHOOLS OF NURSING EDUCATION

	Student Nurses	Accredited Schools of Nursing	Schools Offering Affiliating Courses Only		Administrative Nursing Personnel	Full Time Instructors	Supervisors and Asst. Supervisors	Head Nurses and Asst. Head Nurses	General Duty Nurses		Nurses Not Classified	Total Graduate Nurses	Private Duty Nurses	Practical Nurses and Attendants	Volunteer Nurses' Aides	Orderlies	Ward Maids
			Schools	Students					Full Time	Part Time							
Alabama	1,043	18	2	43	131	35	246	295	883	38	41	1,669	265	1,200	349	801	520
Arizona	442	4	..	..	50	16	58	137	376	22	30	639	102	446	123	217	161
Arkansas	556	8	..	..	86	13	109	146	402	37	24	817	93	822	195	533	189
California	4,692	41	9	732	570	171	1,231	2,561	7,520	903	483	13,439	1,526	6,477	2,205	8,683	2,202
Colorado	1,475	19	3	208	118	84	211	301	753	128	27	1,622	183	1,055	190	1,013	276
Connecticut	2,620	18	3	407	112	114	314	513	957	304	197	2,511	609	1,415	1,912	327	417
Delaware	577	7	1	42	25	16	59	55	128	7	8	298	122	188	46	56	47
District of Columbia	1,249	9	1	103	49	41	197	403	933	73	77	1,773	289	1,356	391	630	361
Florida	1,030	14	..	..	131	40	302	429	1,554	103	314	2,873	718	1,486	752	1,122	1,314
Georgia	1,770	13	2	6	136	39	300	438	1,292	46	73	2,324	451	839	382	2,154	1,001
Idaho	503	8	..	..	50	15	64	63	392	46	9	639	29	175	79	1,109	63
Illinois	9,588	96	12	963	509	318	1,426	1,595	4,256	755	243	9,102	1,615	4,607	3,063	1,909	1,551
Indiana	3,735	27	3	78	182	91	427	495	1,476	204	72	2,847	394	1,466	1,028	485	572
Iowa	2,858	29	2	314	161	64	455	260	834	208	69	2,051	290	912	458	483	312
Kansas	2,031	35	..	..	152	58	276	228	790	103	86	1,693	192	1,072	771	414	218
Kentucky	1,334	14	1	131	107	37	234	216	777	50	37	1,458	230	1,701	812	810	406
Louisiana	1,883	16	..	..	98	60	260	424	769	48	84	1,743	271	1,035	160	1,041	759
Maine	1,058	15	2	77	85	34	158	182	336	69	46	910	203	1,281	139	122	142
Maryland	2,498	22	5	231	156	76	279	533	1,028	92	105	2,269	456	990	1,430	1,392	982
Massachusetts	7,151	62	15	717	425	234	1,030	1,632	2,566	647	302	6,886	1,359	3,111	3,241	2,311	1,663
Michigan	4,996	34	6	417	334	157	732	772	3,075	728	182	5,980	519	3,880	1,612	1,213	1,313
Minnesota	4,714	29	13	403	251	156	512	610	1,156	426	149	3,260	580	1,833	738	476	851
Mississippi	580	21	..	..	97	21	165	167	608	35	49	1,142	222	587	163	590	219
Missouri	3,182	30	8	299	207	85	467	562	1,532	226	110	3,180	504	2,400	1,361	1,185	973
Montana	1,021	11	3	64	64	29	107	103	215	52	36	606	68	250	143	57	79
Nebraska	1,377	13	3	79	99	35	195	161	481	125	68	1,164	117	657	704	275	278
Nevada	...	..	..	..	9	..	19	12	116	6	10	172	25	75	22	21	22
New Hampshire	844	14	..	..	50	34	106	147	228	104	31	700	118	98	253	126	212
New Jersey	5,073	42	6	279	237	136	569	996	1,936	470	212	4,556	916	1,762	2,437	1,371	792
New Mexico	113	2	..	..	32	5	48	44	407	30	8	574	42	158	95	306	289
New York	12,745	101	20	1,584	893	456	2,143	4,106	9,647	1,928	848	20,021	4,093	11,870	6,771	4,836	3,615
North Carolina	2,616	47	2	42	203	96	422	538	1,458	64	79	2,860	408	1,221	611	1,777	883
North Dakota	1,174	13	..	..	50	26	109	104	158	45	17	509	57	260	82	49	162
Ohio	8,536	65	9	1,342	370	312	842	1,317	3,403	1,293	431	8,058	1,809	3,314	3,611	1,565	2,131
Oklahoma	1,081	13	..	..	117	28	215	177	681	39	42	1,299	114	1,257	274	553	391
Oregon	1,254	11	5	15	111	51	168	325	607	175	90	1,527	196	617	323	565	370
Pennsylvania	13,774	124	13	1,046	524	416	1,555	1,613	4,392	735	362	9,797	2,673	3,177	7,894	2,230	1,016
Rhode Island	697	5	4	179	47	32	123	165	369	120	34	890	65	524	494	92	149
South Carolina	1,252	16	..	..	92	37	265	283	534	21	24	1,106	227	687	240	632	296
South Dakota	866	11	..	..	58	20	83	104	233	33	15	546	33	283	118	133	151
Tennessee	2,095	18	3	154	137	52	178	489	993	63	80	1,992	457	1,312	421	1,222	625
Texas	4,187	37	1	114	405	126	745	848	2,771	164	170	5,229	896	3,489	760	2,468	1,412
Utah	777	6	..	..	35	15	67	158	252	86	45	658	14	223	259	439	169
Vermont	571	9	..	..	40	18	86	57	158	42	19	420	132	189	155	47	56
Virginia	2,351	29	3	59	175	66	372	663	1,601	120	48	3,045	645	1,951	817	1,978	995
Washington	2.510	19	5	309	167	80	314	602	1,508	225	144	3,040	227	1,334	286	1,431	879
West Virginia	1,731	28	..	40	109	50	221	213	643	38	65	1,239	331	347	211	593	490
Wisconsin	2,628	25	5	751	221	75	446	442	1,422	516	77	3,199	336	2,358	1,373	624	732
Wyoming	72	2	1	10	21	4	36	35	206	34	7	343	21	325	133	120	73
Totals	130,909	1,250	171	11,238	8,488	4,174	18,786	26,769	68,902	11,826	5,779	144,724	25,277	80,105	49,771	52,671	33,866

PROFESSIONAL AND AUXILIARY NURSING PERSONNEL

	Federal Hospitals	Nonfederal Hospitals					Totals All Hospitals
		General	Nervous and Mental	Tuberculosis	Others	Totals	
Number of hospitals	705	4,135	527	431	713	5,806	6 511
Number of beds	546 384	446 474	600,668	72,594	72,824	1,192,560	1,738,944
Number of admissions	4,047,949	11,329,275	202,444	73,992	603 742	12 909,453	16,257,402
Average daily census	391,935	331,968	575 319	54,827	51,198	1,013,312	1,405,247
Professional Nursing Personnel							
Administrative nursing personnel	811	6,192	433	442	610	7,677	8,488
Full time instructors	124	3,780	140	27	103	4,050	4,174
Supervisors and assistant supervisors	1,510	14,856	1,137	520	763	17,276	18,786
Head nurses and assistant head nurses	6,942	16 311	1,762	811	943	19,827	26 769
General duty nurses							
Full time	20,318	42 358	1 514	1 950	2,762	48,584	68 902
Part time	48	10,930	101	294	453	11,748	11,876
Nurses not classified	671	4,555	161	130	262	5,108	5,779
Total graduate nurses employed	30,424	98,982	5,248	4,174	5,886	114 300	144,724
Private duty nurses	39	24,212	299	302	425	25,238	25,277
Auxiliary Nursing Personnel							
Practical nurses and attendants	12 642	25,698	33 895	3,794	4,076	67,463	80,105
Volunteer nurses' aides	1,771	45,062	275	1 099	1 567	48 003	49,774
Orderlies	37,275	11 037	1,736	1,395	1,211	15,379	52 654
Ward maids	6 548	22,374	1,908	1,414	1 622	27,318	33,866

TECHNICAL PERSONNEL IN ALL HOSPITALS

	Laboratory Technicians		X Ray Technicians		Dietitians		Physical Therapists		Pharmacists		Medical Record Librarians		Medical Stenographers		Occupational Therapists		Nurse Anesthetists	
	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time	Full Time	Part Time
Alabama	213	24	140	29	108	8	51	4	49	3	73	13	143	13	40	8	71	12
Arizona	88	12	48	12	31	2	16	1	26		23	6	[illegible]	4	11		13	4
Arkansas	121	18	83	21	48	11	31	3	26	1	44	8	95	9	23	1	41	13
California	1,162	118	674	91	426	25	475	46	372	49	252	59	1,021	59	240	32	241	37
Colorado	175	22	119	17	78	6	41	21	45	8	55	21	186	15	26	15	36	6
Connecticut	188	17	124	12	117	..	51	9	47	5	62	9	146	23	41	8	71	10
Delaware	34	1	17	5	19	..	9	1	5	5	9	3	18	5	10	2	13	1
District of Columbia	117	3	56	3	75	1	38	4	32	1	29	1	70	4	40	2	31	
Florida	362	33	213	27	95	8	77	7	106		56	23	266	9	42	5	77	13
Georgia	402	25	231	27	100	9	88	9	73	6	71	21	245	10	59	6	109	17
Idaho	37	6	27	7	15	.	11		13	1	10	8	79	1	9		17	13
Illinois	879	125	478	86	380	28	251	26	231	21	250	64	550	85	213	34	328	45
Indiana	279	49	161	36	113	14	62	10	59	11	80	18	123	26	64	4	28	8
Iowa	135	34	113	37	90	12	42	10	41	7	67	22	131	16	22	4	45	33
Kansas	180	71	95	37	88	12	43	10	50	6	65	29	121	16	39		28	12
Kentucky	178	32	105	31	79	6	32	6	36	2	38	19	93	9	27	2	36	3
Louisiana	298	11	140	13	113	4	38	3	66	2	69	14	100	9	13	1	86	10
Maine	73	18	38	21	39	2	13	3	16	2	32	6	65	3	11		36	14
Maryland	220	32	106	14	119	7	61	14	61	8	68	14	219	17	64	5	54	17
Massachusetts	676	104	337	58	366	13	158	24	146	12	180	44	510	46	171	6	130	25
Michigan	462	73	292	68	250	21	128	10	123	70	127	48	348	41	93	4	205	39
Minnesota	290	69	132	64	137	15	45	15	50	12	71	36	109	21	46	5	131	56
Mississippi	173	37	91	41	70	11	17	6	29	1	30	26	119	19	28	1	59	29
Missouri	392	65	212	37	163	23	106	14	99	10	104	23	199	13	66	60	86	10
Montana	42	20	30	13	22	2	6	4	12	2	29	8	40	10	3	1	29	19
Nebraska	113	15	72	19	50	8	18	4	35	10	39	10	116	12	21	..	65	25
Nevada	16	5	11	5	4	2	1	2	4	2	3	2	5	3		.	1	2
New Hampshire	50	13	29	13	30	3	6	3	7	5	30	7	23	9	16	3	6	3
New Jersey	435	40	218	32	252	7	134	33	101	19	110	25	255	16	155	10	89	10
New Mexico	73	16	47	17	35	1	14	1	24		21	7	66	6	17		13	8
New York	1,750	141	878	97	1,045	32	523	81	435	45	511	91	1,346	62	570	35	309	31
North Carolina	327	44	177	47	205	14	61	4	62	6	107	26	308	21	30	4	112	32
North Dakota	42	20	25	11	20	4	6	6	6	1	17	10	22	4	2	1	32	18
Ohio	557	124	283	80	332	20	133	18	122	26	166	37	768	76	82	10	146	9
Oklahoma	175	31	122	30	87	5	50	2	46	6	80	19	159	13	22	1	47	11
Oregon	128	37	88	27	52	3	22	1	29	4	26	11	89	8	13		77	18
Pennsylvania	670	119	452	63	507	29	196	77	201	62	274	74	568	48	135	22	373	61
Rhode Island	79	5	41	4	35	2	19	5	23	6	23	5	76	2	23	2	7	
South Carolina	159	30	104	24	79	9	18	5	30	4	63	12	109	13	12	.	41	11
South Dakota	51	18	40	16	24	4	15	3	13	3	31	10	48	5	6	1	27	17
Tennessee	234	52	138	37	133	17	62	5	53	9	95	20	181	27	40	5	66	21
Texas	869	110	519	85	331	22	155	16	184	14	284	54	699	33	112	15	211	53
Utah	80	12	33	11	40	6	56	2	17	7	18	7	71	3	15	.	74	5
Vermont	29	7	22	10	18	2	8		5	1	18	7	19	7	10	..	9	2
Virginia	279	63	189	42	174	7	106	4	68	4	102	21	250	19	79	1	110	15
Washington	259	39	187	35	150	10	91	10	79	10	80	22	118	17	51	1	125	23
West Virginia	162	20	100	13	79	8	55	21	16	2	61	11	175	9	26	1	67	9
Wisconsin	243	69	140	67	125	12	69	18	66	19	87	38	230	38	41	8	176	45
Wyoming	25	3	19	7	17	1	8	2	6		6	5	24	1	10	1	7	6
Totals (1945)	14 144	2 0 2	7,996	1 094	7,025	468	3,716	583	3 461	460	4 151	1,074	10,400	845	2,002	322	4,142	854
(1944)	14 111	2 093	8,115	1,795	6,753	695	3,220	747	3 600	583	4,248	1,262	9,025	1,711	2,066	416	3 723	1 066
(1943)	13 349	2 073	7,834	1,783	6,482	609	2 905	719	3,563	605	4 155	1,191	8 816	1,202	1,883	251	3 609	1,212
(1942)	10 861	1,835	6 303	1,601	6 077	557	2 643	772	2 095	533	3 426	1 025	6 571	1 015	1,727	257	3,274	952
(1941)	9,609	1,6 6	5,534	1,535	5 548	459	2,505	602	2,382	497	3,035	897	6,016	990	1 882	250		
(1930)	6 705		4,705		4,331		2,382		1,991						1,809			

INTERNSHIPS AND RESIDENCIES

ADDITIONAL RESIDENCIES APPROVED

The following residency training programs have been approved since the publication of the latest list of Approved Residencies and Fellowships in THE JOURNAL, Sept. 29, 1945. Those designated with an asterisk (*) have been granted temporary approval in accordance with the plan announced in THE JOURNAL, March 2, 1946, p. 586.

ADDITIONAL RESIDENCIES APPROVED

Anesthesia

*Passavant Memorial Hospital	Chicago
*Beverly Hospital	Beverly, Mass.
*Boston City Hospital	Boston
Faulkner Hospital	Boston
Newton-Wellesley Hospital	Newton, Mass.
*Salem Hospital	Salem, Mass.
City of Detroit Receiving Hospital	Detroit
*Beth Israel Hospital	New York City
*Rochester General Hospital	Rochester, N. Y.
*Mount Sinai Hospital	Cleveland
St. Luke's Hospital	Cleveland
Starling-Loving University Hospital	Columbus O.
*Lankenau Hospital	Philadelphia
*Bishop DeGoesbriand Hospital	Burlington, Vt.
Mary Fletcher Hospital	Burlington, Vt.
*U. S. Naval Hospital	St. Albans, N. Y.

Dermatology and Syphilology

Colorado General Hospital	Denver
*Michael Reese Hospital	Chicago
*Passavant Memorial Hospital	Chicago
Massachusetts Memorial Hospitals	Boston
Ancker Hospital	St. Paul
*Hospital for Joint Diseases	New York City
*St. Luke's Hospital	New York City
Presbyterian Hospital	Pittsburgh
Cleveland Clinic Foundation Hospital	Cleveland
John Sealy Hospital	Galveston, Tex.
*U. S. Naval Hospital	Philadelphia

Medicine

*Samuel Merritt Hospital	Oakland, Calif.
*Delaware Hospital	Wilmington, Del.
Memorial Hospital	Wilmington, Del.
*Alexian Bros. Hospital	Chicago
Illinois Masonic Hospital	Chicago
*Methodist Hospital	Indianapolis
*Beverly Hospital	Beverly, Mass.
*New England Deaconess Hospital	Boston
*Salem Hospital	Salem, Mass.
Research Hospital	Kansas City, Mo.
*Methodist Hospital	Brooklyn
*Beth Israel Hospital	New York City
Roosevelt Hospital	New York City
Charlotte Memorial Hospital	Charlotte, N. C.
Toledo Hospital	Toledo, O.
*Emanuel Hospital	Portland, Ore.
*Hospital of the Protestant Episcopal Church	Philadelphia
Western Pennsylvania Hospital	Pittsburgh
*Rhode Island Hospital	Providence, R. I.
*Methodist Hospital	Dallas, Tex.
*St. Paul's Hospital	Dallas, Tex.
*Alexandria Hospital	Alexandria, Va.
*Johnston-Willis Hospital	Richmond, Va.
*Swedish Hospital	Seattle, Wash.
U. S. Marine Hospital	Baltimore
U. S. Naval Hospital	Bethesda, Md.
U. S. Naval Hospital	Philadelphia

Mixed

Boulder-Colorado Sanitarium and Hospital	Boulder, Colo.
Alton Memorial Hospital	Alton, Ill.
Cottage Hospital	Grosse Pointe, Mich.
St. Luke's Hospital	Richmond, Va.

Neurosurgery

Montefiore Hospital for Chronic Diseases	New York City

Obstetrics-Gynecology

*Samuel Merritt Hospital (ObG)	Oakland, Calif.
*St. Luke's Hospital (ObG)	Denver
*Hartford Hospital (ObG)	Hartford, Conn.
Illinois Masonic Hospital (ObG)	Chicago
*Ravenswood Hospital (ObG)	Chicago

Obstetrics-Gynecology—Continued

St. Joseph Hospital (Gyn)	Chicago
*St. Mary of Nazareth Hospital (ObG)	Chicago
*Swedish Covenant Hospital (ObG)	Chicago
Wesley Memorial Hospital (Gyn)	Chicago
*Evanston Hospital (ObG)	Evanston, Ill.
St. Francis Hospital (ObG)	Evanston, Ill.
Hospital for Women of Maryland (Ob)	Baltimore
*St. Agnes Hospital (ObG)	Baltimore
*West Baltimore General Hospital (ObG)	Baltimore
*St. Joseph's Mercy Hospital (ObG)	Ann Arbor, Mich.
*Beth Israel Hospital (Ob)	New York City
*Bronx Hospital (Ob)	New York City
*Lenox Hill Hospital (Gyn)	New York City
Highland Hospital (Ob)	Rochester, N. Y.
Rochester General Hospital (Ob)	Rochester, N. Y.
*City Hospital (ObG)	Akron, O.
*Peoples Hospital (Ob)	Akron, O.
*Aultman Hospital (ObG)	Canton, O.
Lutheran Hospital (Ob)	Cleveland
Starling-Loving University Hospital (Ob)	Columbus, O.
*Toledo Hospital (ObG)	Toledo, O.
*Emanuel Hospital (ObG)	Portland, Ore.
*Germantown Dispensary and Hospital (ObG)	Philadelphia
*Jewish Hospital (ObG)	Philadelphia
*Providence Lying-In Hospital (Ob)	Providence, R. I.
*Methodist Hospital (Ob)	Memphis, Tenn.
*St. Joseph Hospital (ObG)	Memphis, Tenn.
*Harris Memorial Methodist Hospital (ObG)	Fort Worth, Tex.
*Dr. W. H. Groves Latter-Day Saints Hospital (ObG)	Salt Lake City
Salt Lake County General Hospital (ObG)	Salt Lake City
*Swedish Hospital (ObG)	Seattle, Wash.
*Virginia Mason Hospital (ObG)	Seattle, Wash.
*Milwaukee Hospital (ObG)	Milwaukee
Kapiolani Maternity and Gynecological Hospital (Ob)	Honolulu, Hawaii
U. S. Naval Hospital (ObG)	Chelsea, Mass.
U. S. Naval Hospital (ObG)	Brooklyn
U. S. Naval Hospital (ObG)	Norfolk, Va.
U. S. Naval Hospital (ObG)	Portsmouth, Va.

Ophthalmology

University of Nebraska Hospital	Omaha

Orthopedic Surgery

Highland-Alameda County Hospital	Oakland, Calif.
Samuel Merritt Hospital	Oakland, Calif.
*Stanford University Hospitals	San Francisco
*Santa Clara County Hospital	San Jose, Calif.
*St. Luke's Hospital	Denver
*Corwin Hospital	Pueblo, Colo.
*Hartford Hospital	Hartford, Conn.
*Evanston Hospital	Evanston, Ill.
St. Francis .	Evanston, Ill.
Indianapolis	Indianapolis
*University of	Kansas City, Kan.
*Touro Infirmary	New Orleans
Worcester City Hospital	Worcester, Mass.
*Blodgett Memorial Hospital	Grand Rapids, Mich.
Borgess Hospital	Kalamazoo, Mich.
University Hospitals	Columbia, Mo.
Barnes Hospital	St. Louis
Monmouth Memorial Hospital	Long Branch, N. J.
Orthopedic Hospital and Dispensary	Trenton, N. J.
*Albany Hospital	Albany, N. Y.
Binghamton City Hospital	Binghamton, N. Y.
*House of St. Giles the Cripple	Brooklyn
*Millard Fillmore Hospital	Buffalo
*Flower and Fifth Avenue Hospitals	New York City
Lenox Hill Hospital	New York City
Sydenham Hospital	New York City
Genesee Hospital	Rochester, N. Y.
*Rochester General Hospital	Rochester, N. Y.
Charlotte Memorial Hospital	Charlotte, N. C.
North Carolina Orthopedic Hospital	Gastonia, N. C.
*Children's Hospital	Akron, Ohio
*City Hospital	Akron, Ohio
Jewish Hospital	Cincinnati
St. Luke's Hospital	Cleveland
Children's Hospital	Columbus, O.

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* Indicates temporary approval.

ADDITIONAL RESIDENCIES APPROVED—Continued

Orthopedic Surgery—Continued

Mount Carmel Hospital	Columbus, O.
*White Cross Hospital	Columbus, O.
Youngstown Hospital	Youngstown, O.
Hamot Hospital	Erie, Pa.
Jefferson Medical College Hospital	Philadelphia
*Allegheny General Hospital	Pittsburgh
*St. Francis Hospital	Pittsburgh
*Baroness Erlanger Hospital	Chattanooga, Tenn.
*Knoxville General Hospital	Knoxville, Tenn.
Baylor University Hospital	Dallas, Tex.
Crippled Children's Hospital	Richmond, Va.
*Medical College of Virginia, Hospital Division	Richmond, Va.
Providence Hospital	Seattle, Wash.
Swedish Hospital	Seattle, Wash.
Charleston General Hospital	Charleston, W. Va.
*King County Hospital	Seattle
*Shriners Hospital for Crippled Children	Spokane, Wash.
Morris Memorial Hospital for Crippled Children	Milton, W. Va.
*Letterman General Hospital	San Francisco
*Fitzsimons General Hospital	Denver
*Walter Reed General Hospital	Washington, D. C.
*Brooke General Hospital	San Antonio, Tex.
*U. S. Marine Hospital	Baltimore
*U. S. Naval Hospital	Long Beach, Calif.
*U. S. Naval Hospital	Oakland, Calif.
*U. S. Naval Hospital	San Diego, Calif.
*U. S. Naval Hospital	Great Lakes, Ill.
*U. S. Naval Hospital	New Orleans
*U. S. Naval Hospital	Chelsea, Mass.
*U. S. Naval Hospital	St. Albans, N. Y.

Pathology

Childrens Hospital	Denver
Colorado General Hospital	Denver
St. Luke's Hospital	Denver
Colorado State Hospital	Pueblo, Colo.
Delaware Hospital	Wilmington, Del.
Providence Hospital	Washington, D. C.
St. Joseph Hospital	Fort Wayne, Ind.
Grace Hospital	Detroit
St. Mary's Group of Hospitals	St. Louis
Binghamton City Hospital	Binghamton, N. Y.
Flower and Fifth Avenue Hospitals	New York City
Memorial Hospital	New York City
Charlotte Memorial Hospital	Charlotte, N. C.
Lankenau Hospital	Philadelphia
John Sealy Hospital	Galveston, Tex.
Salt Lake County General Hospital	Salt Lake City
Army Institute of Pathology	Washington, D. C.
U. S. Naval Hospital	Bethesda, Md.

Pediatrics

*Franklin Hospital	San Francisco
*Hartford Hospital	Hartford, Conn.
*Iowa Methodist Hospital (Raymond Blank Memorial Hospital for Children)	Des Moines, Iowa
*Babies Hospital, Coit Memorial	Newark, N. J.
*Roosevelt Hospital	New York City
*Germantown Dispensary and Hospital	Philadelphia
*Graduate Hospital of the University of Pennsylvania	Philadelphia
*St. Luke's and Children's Medical Center	Philadelphia
*Western Pennsylvania Hospital	Pittsburgh
*Rhode Island Hospital	Providence, R. I.
*Knoxville General Hospital	Knoxville, Tenn.
*St. Joseph Hospital	Memphis, Tenn.

Physical Medicine

Walter Reed General Hospital	Washington, D. C.
University of Kansas Hospitals	Kansas City, Kan.
*Massachusetts General Hospital	Boston
*University Hospitals	Minneapolis
*Montefiore Hospital for Chronic Diseases	New York City
St. Luke's Hospital	New York City
*State of Wisconsin General Hospital	Madison, Wis.

Plastic Surgery

Strong Memorial-Rochester Municipal Hospitals	Rochester, N. Y.

Psychiatry

Veterans Rehabilitation Center	Chicago
Wesley Memorial Hospital	Chicago
*Louisville General Hospital	Louisville, Ky.
Metropolitan State Hospital	Waltham, Mass.
Jefferson Medical College Hospital	Philadelphia
*U. S. Naval Hospital	Bethesda, Md.
*U. S. Naval Hospital	Philadelphia

Radiology

*San Joaquin General Hospital (Roent.)	French Camp, Calif.
*Cedars of Lebanon Hospital (Rad.)	Los Angeles
*Queen of Angels Hospital (Rad.)	Los Angeles

Radiology—Continued

*Permanente Foundation Hospital (Rad.)	Oakland, Calif.
*Collis P. and Howard Huntington Memorial Hospital (Roent.)	Pasadena, Calif.
*Franklin Hospital (Roent.)	San Francisco
*Santa Clara County Hospital (Roent.)	San Jose, Calif.
*Presbyterian Hospital (Rad.)	Denver
*St. Luke's Hospital (Rad.)	Denver
*Corwin Hospital (Roent.)	Pueblo, Colo.
*Grace Hospital (Rad.)	New Haven, Conn.
*Delaware Hospital (D. R.)	Wilmington, Del.
*Gallinger Municipal Hospital (Rad.)	Washington, D. C.
Augustana Hospital (Rad.)	Chicago
*Mercy Hospital (Rad.)	Chicago
*Ravenswood Hospital (Rad.)	Chicago
*St. Joseph Hospital (Roent.)	Chicago
*St. Francis Hospital (Rad.)	Evanston, Ill.
*Little Company of Mary Hospital (D. R.)	Evergreen Park, Ill.
*Baltimore City Hospital (Rad.)	Baltimore
*Quincy City Hospital (Roent.)	Quincy, Mass.
Salem Hospital (Rad.)	Salem, Mass.
St. Joseph's Mercy Hospital (Rad.)	Ann Arbor, Mich.
*Herman Kiefer Hospital (Roent.)	Detroit
*Providence Hospital (Rad.)	Detroit
*Kansas City General Hospital (Rad.)	Kansas City, Mo.
*St. Mary's Hospital (Rad.)	Kansas City, Mo.
St. Mary's Group of Hospitals (Rad.)	St. Louis
*Albany Hospital (Roent.)	Albany, N. Y.
*Beth Moses Hospital (Roent.)	Brooklyn
French Hospital (Rad.)	New York City
Sydenham Hospital (D. R.)	New York City
Rochester General Hospital (Rad.)	Rochester, N. Y.
*Crouse-Irving Hospital (Roent.)	Syracuse, N. Y.
*Peoples Hospital (Rad.)	Akron, O.
*Mount Sinai Hospital (Rad.)	Cleveland
Starling-Loving University Hospital (Rad.)	Columbus, O.
*Youngstown Hospital (Rad.)	Youngstown, O.
Geo. F. Geisinger Memorial Hospital (Roent.)	Danville, Pa.
*American Oncologic Hospital (Ther. Rad.)	Philadelphia
*Germantown Dispensary and Hospital (Rad.)	Philadelphia
Lankenau Hospital (Rad.)	Philadelphia
*Reading Hospital (Rad.)	Reading, Pa.
*Geo. W. Hubbard Hospital (Rad.)	Nashville, Tenn.
*Methodist Hospital (Roent.)	Houston, Tex.
*Milwaukee Hospital (Rad.)	Milwaukee
*Army and Navy General Hospital (Rad.)	Hot Springs National Park, Ark.
*Letterman General Hospital (Rad.)	San Francisco
*Brooke General Hospital (Roent.)	San Antonio, Tex.
*U. S. Marine Hospital (Roent.)	Staten Island, N. Y.
*U. S. Naval Hospital (Roent.)	Long Beach, Calif.
*U. S. Naval Hospital (Roent.)	Oakland, Calif.
*U. S. Naval Hospital (Rad.)	San Diego, Calif.
*U. S. Naval Hospital (Roent.)	Great Lakes, Ill.
*U. S. Naval Hospital (Roent.)	Bethesda, Md.
*U. S. Naval Hospital (Roent.)	Chelsea, Mass.
U. S. Naval Hospital (Roent.)	St. Albans, N. Y.
*U. S. Naval Hospital (Roent.)	Philadelphia

Surgery

Riverside Hospital	Jacksonville, Fla.
St. Vincent's Hospital	Jacksonville, Fla.
American Hospital	Chicago
St. Elizabeth Hospital	Chicago
St. Mary of Nazareth Hospital	Chicago
Hotel Dieu, Sisters Hospital	New Orleans
New England Hospital for Women and Children	Boston
Newton-Wellesley Hospital	Newton, Mass.
Salem Hospital	Salem, Mass.
St. Joseph Mercy Hospital	Ann Arbor, Mich.
Lutheran Deaconess Home and Hospital	Minneapolis
St. John's Hospital	Brooklyn
Highland Hospital	Rochester, N. Y.
Lutheran Hospital	Cleveland
Mount Carmel Hospital	Columbus, O.
Wilkes-Barre General Hospital	Wilkes-Barre, Pa.
Rhode Island Hospital	Providence, R. I.
Knoxville General Hospital	Knoxville, Tenn.
Methodist Hospital	Memphis, Tenn.
Dr. W. H. Groves Latter-Day Saints Hospital	Salt Lake City
La Crosse Lutheran Hospital	La Crosse, Wis.
Queen's Hospital	Honolulu, Hawaii
U. S. Marine Hospital	Chicago
U. S. Marine Hospital	New Orleans
U. S. Marine Hospital	Boston
U. S. Marine Hospital	Detroit

Traumatic Surgery

St. Joseph Hospital	Memphis, Tenn.

Tuberculosis

St. Joseph Hospital for Chest Diseases	New York City

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* Indicates temporary approval.

FACILITIES FOR RESIDENCY TRAINING

In 1941, under normal peacetime conditions, the hospitals approved for residency training provided facilities for 5,256 residents. After the war began, it soon became apparent, however, that many additional residencies would be required when medical officers returned to continue the education interrupted or delayed by call to military service. To help meet this need the Council on Medical Education and Hospitals instituted in November 1942 a study of graduate and postgraduate educational facilities in the United States, urging at the same time that additional residencies be developed in hospitals which had not yet reached their full educational capacity. Hospitals expressed an earnest desire to participate in this program and many began at once to formulate plans for the development of new residencies or the expansion of educational services already in operation. By October 1945 the number of approved residencies offered in civilian hospitals had increased to 7,666 and with the addition of recent approvals as listed above the total is now 8,043. This, it should be noted, represents an increase of 53.2 per cent, as compared with the number of residencies in 1941. Since October 1945, 269 additional residency training programs have been approved, as shown on pages 1086 and 1087. These include 162 which have been granted temporary approval in accordance with the plan described in the adjoining column. The newly approved services can accommodate 377 resident physicians. Reference should be made to the accompanying table showing distribution of residencies in relation to the various specialties.

Approved Residencies Classified by Specialties

(Civilian Hospitals Only)

Specialty	Hospitals Approved	Number of Residents
Anesthesiology	69	226
Cardiology	7	10
Communicable Diseases	18	72
Dermatology and Syphilology	45	136
Fractures	5	15
Malignant Diseases	17	73
Medicine	270	1,281
Mixed *	84	231
Neurology	31	111
Neurosurgery	34	93
Obstetrics and Gynecology	234	766
Ophthalmology and Otolaryngology	125	582
Orthopedic Surgery	147	386
Pathology	223	469
Pediatrics	142	517
Physical Medicine	10	22
Plastic Surgery	5	9
Psychiatry	143	637
Radiology	203	430
Surgery	330	1,452
Thoracic Surgery	22	47
Traumatic Surgery	3	4
Tuberculosis	93	324
Urology	82	210
Totals	2,342 †	8,043

* All hospitals approved for internships are also accredited for mixed residencies.
† Number of residency programs in hospitals.

Residency type of training is also being developed in hospitals of the Army, Navy, U. S. Public Health Service and Veterans Administration. Information regarding these programs has been published in previous issues of The Journal.

TEMPORARY APPROVAL OF RESIDENCIES

With the increased demand for residency training in recent months, large numbers of applications have been submitted by hospitals seeking Council approval of newly organized educational programs. To make these facilities available to physician veterans without undue delay, the Council has instituted a plan for the temporary approval of such residencies as give satisfactory indication that training can be maintained in accordance with present standards. The plan has been developed in collaboration with the Advisory Board for Medical Specialties and has already been approved by nearly all of the specialty boards.

It should be noted that temporary approval is not automatic; each application will be carefully evaluated on the basis of information supplied as well as previous knowledge of the hospital service. Only if the representatives of the Council and of the Board are reasonably satisfied that the educational program fulfils the requirements for residency training will temporary approval be extended. The following procedure has been adopted:

1. The Council on Medical Education and Hospitals of the American Medical Association has temporarily delegated to its secretary the authority to grant temporary residency approval on behalf of the Council subject to concurrence by the appropriate American board as described in No. 2.

2. Each participating American board has appointed representatives (usually one individual for each board) to consider new residencies for temporary approval with authority to act on behalf of the board.

3. Temporary approval will be based on information from the hospital concerning the personnel, facilities and educational program of the hospital service involved without immediate inspection. Such approval will be granted only if the representatives of the Council and of the board are reasonably satisfied that the educational program fulfils the standards of both bodies.

4. Subsequently, employing the usual procedures, an inspection of the hospital will be carried out by the Council's staff. On the basis of inspection report, the Council will consider the temporarily approved hospital for transfer to the regularly approved list in the usual manner. The inspection report and the recommendations of the Council will be submitted to the appropriate board, and the board will return its concurrence or disagreement with the Council. The result of this procedure would be either (*a*) transfer of the temporarily approved residency to a fully approved status or (*b*) withdrawal of the temporary approval.

5. In the event of withdrawal of temporary approval and failure to grant regular approval, credit toward board certification will be given to physicians for that part of their training received while the residency was on a temporary approval status. After such withdrawal of approval, residents seeking board certification will be given a reasonable time to obtain another acceptable residency without loss of time credit. This means that no resident would be penalized so far as board credit is concerned for time spent in a temporarily approved residency.

In seeking approval by the Council on Medical Education and Hospitals, those hospitals which organize new residencies should initially make no distinction between regular versus temporary approval. Applications should be transmitted to the Council in the regular manner. In the immediate future most, if not all, applications will be considered at once for temporary approval. The Council's staff will proceed with regular inspections as rapidly as possible so that transfer of acceptable hospital residencies from the temporarily approved to the regular approved list will take place as rapidly as possible if the inspection report seems to warrant such transfer in the opinion of the representatives of the Council and of the American board concerned.

RECONVERSION OF INTERNSHIPS AND RESIDENCIES

The withdrawal of intern and residency quotas from all hospitals on April 1, 1946 as announced by the Procurement and Assignment Service[1] marks the return of hospital educational services to a peacetime status. With this change as well as the return of medical officers to former staff positions, it may be anticipated that many hospitals will reorganize their educational programs for interns and residents, institute new residencies in various departments and reestablish those which remained inactive during the war because of quota limitations or reduction in teaching staff. When adequate clinical and teaching facilities are available such expansion will be of direct benefit to physician veterans as it will lead to further opportunities for residency training.

In November 1945 the Procurement and Assignment Service[2] announced its plan for the reconversion of the 9-9-9 program. Under this plan the commissioned officers scheduled to complete their nine months internship on April 1 would be permitted to continue their training until July 1, 1946. It was stated, however, that if hospitals were unable to accommodate these men as well as the new interns appointed for April 1, the commissioned officers who completed their nine months of intern training would be called to active duty. A subsequent directive specified also that requests for extension of individual internships through the additional three months period would need to be submitted by February 1. Since one of the main purposes of the reconversion program was to reestablish the peacetime status of twelve months internships beginning each July the new interns appointed April 1, 1946 will be permitted to continue until July 1, 1947.

It was also the purpose of the reconversion plan to provide more residency positions for returning medical officers and hospitals were urged to begin at once to appoint veterans to the house staff so that every military resident and assistant resident could be called to active duty on or before April 1, 1946. The discontinuance of deferments beyond the intern level has made available to veterans many additional places and as time goes on an increasing number of positions will be filled by returned medical officers, who now constitute practically the only source of supply for the future residency appointments.

The Council in cooperation with the specialty boards will lend every effort to aid the establishment of additional high grade educational programs so that all veterans who wish to continue their residency training may have an opportunity to obtain an acceptable hospital appointment. The expansion of residency programs by over 53 per cent since 1941 as well as the present numbers of applications for Council approval is clear indication of the desire of hospitals to make their facilities available for the continued training of physician veterans.

HOSPITAL INTERNSHIP

There are at the present time within the continental limits of the United States 1,096 civilian hospitals approved by the American Medical Association for intern and/or residency training. Of this total 395 are approved for internships only, 376 for both internships and residencies and 371 exclusively for residencies in specialties. Considered separately, the hospitals approved for internships total 743 and the hospitals approved for residencies 764. It should be noted, however, that all hospitals approved for intern training are likewise accredited for mixed residencies which are in the main similar to second year internships.

The hospitals approved for intern training can accommodate 8,427 interns as shown in the accompanying table. The reports indicate that 5,587 interns are in training, 4,851 serving in rotating assignments, 128 on mixed services and 608 in straight internships. With the termination of the 9-9-9 program the hospitals are now returning to the regular twelve months internships. Although several hospitals had 18 or 24 months services before the war it is anticipated that most internships will continue as one year assignments followed by assistant residencies and residencies for those who desire additional hospital training either of a general or special character. As hospitals return to a peacetime basis a reorganization of the internship will occur in many institutions. In this connection the Council will be glad to assist hospitals in the planning of educational activities and the organization of individual training programs.

Internships in Approved Hospitals

(Civilian Hospitals Only)

State	Number of Hospitals	Internships Offered	Number of Interns
Alabama	5	53	43
Arizona	3	10	6
Arkansas	3	27	18
California	38	544	399
Colorado	9	64	50
Connecticut	18	175	116
Delaware	4	29	23
District of Columbia	11	138	113
Florida	6	50	37
Georgia	9	118	70
Illinois	57	670	454
Indiana	15	164	107
Iowa	9	63	30
Kansas	7	45	29
Kentucky	8	55	33
Louisiana	12	245	155
Maine	4	22	14
Maryland	17	276	180
Massachusetts	39	419	289
Michigan	31	361	255
Minnesota	13	133	97
Missouri	25	321	221
Montana	2	7	..
Nebraska	9	48	34
New Hampshire	1	8	7
New Jersey	41	399	208
New York	103	1,632	1,091
North Carolina	9	121	86
North Dakota	1	2	..
Ohio	44	449	265
Oklahoma	5	46	34
Oregon	6	67	57
Pennsylvania	78	761	471
Rhode Island	4	41	24
South Carolina	3	38	24
Tennessee	12	138	95
Texas	20	172	138
Utah	5	39	31
Vermont	2	8	6
Virginia	11	121	74
Washington	15	99	83
West Virginia	7	42	26
Wisconsin	22	152	94
Totals	743	8,427	5,587

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1. J. A. M. A., Feb. 16, 1946, p. 418.
2. J. A. M. A., Nov. 24, 1945, pp. 878-879.

APPOINTMENT OF INTERNS

The following plan for the appointment of interns whose services will begin July 1, 1947 has been approved by a Joint Committee of the American Hospital Association, Association of American Medical Colleges, Council on Medical Education and Hospitals of the American Medical Association, American Protestant Hospital Association and Catholic Hospital Association of the United States and Canada. The plan applies only to July 1, 1947 appointments and will be modified for later internships. It provides that applications for internships should be submitted in accordance with the following principles:

1. Applications and credentials for internships to begin by July 1, 1947 should not be released by the medical schools nor received by the hospitals before June 1, 1946. Credentials include letters of recommendation, summaries of scholastic records from the dean's office, transcripts of records and recommendations of college faculties.
2. Hospitals should not issue appointments to interns, either written or verbal, before July 1, 1946.
3. The prospective intern's acceptance or rejection of such appointment shall reach the hospital on or before July 8, 1946.
4. Medical school teaching staffs will very carefully refrain from conversations with their clinical clerks which may be interpreted as promises of internship appointment.

It is strongly urged that all medical schools and hospitals cooperate on the basis of the principles just described. The plan can be successful only if there is complete cooperation by all concerned.

NECROPSY PERFORMANCE

The correlation of clinical and pathologic material has long been recognized as one of the most important functions in the training of interns. The lack of pathologic material therefore, or the failure to utilize available facilities to the fullest extent will seriously impair the quality of house staff instruction. The accompanying table illustrates the volume of necropsy performance in approved internship hospitals for various years since 1926. Here it will be noted that the continued increase in necropsy rates which culminated in the report of 1941 was followed by a reduction in the first war years. An encouraging report was obtained in 1944 and still further increase was observed in the present study. The fact that 328 hospitals have rates of 30 per cent or over and that in this group 26 have attained the level of 70 per cent is evidence of the earnest desire on the part of hospitals and medical staffs to maintain the highest quality of educational service for interns and resident physicians.

Necropsy Performance in Approved Intern Hospitals

Percentage	Number of Hospitals Reporting						
	1926	1930	1937	1941	1943	1944	1945
70 or over	14	19	27	43	21	26	26
50–69	21	56	68	120	70	66	78
30–49	68	164	263	290	222	231	224
15–29	146	354	348	356	291	315	346
Below 15	329	71	26	18	100	74	57
Totals	578	664	732	727	704*	712*	731

* Does not include federal hospitals approved for intern training.

*Highest Necropsy Rates in Approved Internship Hospitals—1945**

	Control	Percentage
1. University of Nebraska Hospital, Omaha	State	97.7
2. Research and Educational Hospitals, Chicago.	State	88.7
3. Fitzgerald-Mercy Hospital, Darby, Pa.	Church	87.9
4. Mary Hitchcock Memorial Hospital, Hanover, N. H.	NPAssn	87.2
5. Charles T. Miller Hospital, St. Paul	NPAssn	85.5
6. St. Mary's Hospital, Duluth, Minn.	Church	84.5
7. Evanston Hospital, Evanston, Ill.	NPAssn	84.5
8. Peter Bent Brigham Hospital, Boston	NPAssn	80.0
9. Garfield Memorial Hospital, Washington, D. C.	NPAssn	79.0
10. Colorado General Hospital, Denver	State	78.1
11. Huron Road Hospital, East Cleveland, Ohio	NPAssn	78.1
12. University of California Hospital, San Francisco	State	77.5
13. Permanente Foundation Hospital, Oakland, Calif.	NPAssn	76.5
14. University of Chicago Clinics, Chicago	NPAssn	75.8
15. St. Luke's Hospital, Duluth, Minn.	NPAssn	75.4
16. Rochester General Hospital, Rochester, N. Y.	NPAssn	75.2
17. Children's Hospital, Boston	NPAssn	73.5
18. Iowa Methodist Hospital, Des Moines	Church	73.1
19. Strong Memorial Hospital, Rochester, N. Y.	NPAssn	73.1
20. Ancker Hospital, St. Paul	CyCo	72.9
21. Northern Permanente Hospital, Vancouver, Wash.	NPAssn	72.8
22. Trinity Hospital, Minot, N. D.	Church	71.6
23. Beverly Hospital, Beverly, Mass.	NPAssn	71.5
24. Massachusetts Memorial Hospital, Boston	NPAssn	71.3
25. Quincy City Hospital, Quincy, Mass.	City	70.2
26. Loretto Hospital, Chicago	Church	70.1

* Does not include federal hospitals approved for intern training.

It is of further interest to note that in the ten year period from 1936 to 1945, a total of sixty-seven nonfederal hospitals have attained the highly commendable necropsy rate of 70 per cent or over. Three hospitals in this group were above the 70 per cent level in ten successive years while two had a similar record for nine years, two for eight years and two for seven years. Nine hospitals were included in six of the ten years, three appeared in the list five times, while four attained this level four times. Of the other hospitals seven were listed three separate years, eleven two years and twenty-four once. It is particularly significant that this record of achievement is shared widely by general hospitals of various classifications. Of the sixty-seven hospitals, for example, thirty-six are listed as nonprofit associations, fourteen as church related hospitals, eight under state control, two under county management, four municipal, two city-county and one under corporate ownership unrestricted as to profit.

The accomplishment of these hospitals is evidence of wholehearted cooperation on the part of the hospital administration, medical staff, hospital pathologist, resident physicians, interns and other personnel associated with hospital educational programs. This record should serve as an incentive to other hospitals that have been less successful in their program of necropsy performance. For many years the average necropsy rate in hospitals approved by the Council for the training of interns has been over 35 per cent.

HOSPITALS REGISTERED BY THE AMERICAN MEDICAL ASSOCIATION

The following list contains the names of 6,511 hospitals, sanatoriums and related institutions that are located in the United States and 123 in Alaska, Canal Zone, Hawaii, Puerto Rico and Virgin Islands. The list for each state is presented in two groups: (1) hospitals and sanatoriums, and (2) related institutions. The related institutions include infirmaries, nursing homes and other institutions designed to give certain medical and nursing care in an ethical and acceptable manner, without giving a full hospital service.

Registration of hospitals is governed by the Essentials of a Registered Hospital, adopted by the House of Delegates in 1928 and revised in 1939.

Registration is a basic recognition, extended to all the hospitals and related institutions in the following list, concerning which we have no evidence of irregular or unsafe practices. *Approval* is designation of certain registered institutions by the Council on Medical Education and Hospitals for internships, residencies and fellowships; or by the American College of Surgeons as unconditionally meeting its minimum requirements for general standardization.

KEY TO SYMBOLS AND ABBREVIATIONS

★ Approved for training interns by the Council on Medical Education and Hospitals. List with detailed information is sent on request.

✚ Approved for residencies or fellowships. List with detailed information is sent on request.

▲ Approved by American College of Surgeons as meeting unconditionally its minimum requirements for general standardization

◇ School of nursing accredited by state board of nurse examiners.

○ Affiliated for nurse training on state accredited basis.

† Figures for "average census" and "admissions" are exclusive of newborn infants.

The column headed "Type of Service" tells what diseases are treated in each institution:

Card	Cardiac	ENT	Eye, ear, nose and throat	Iso	Isolation	N&M	Nervous and mental
Chil	Children	Gen	General	Mat	Maternity	Orth	Orthopedic
Chr	Chronic	Incur	Incurable	MatCh	Maternity and children	SkCa	Skin and cancer
Conv	Convalescent and rest	Indus	Industrial	MeDe	Mentally deficient	TB	Tuberculosis
Drug	Drug and alcoholic	Inst	Institutional	Ment	Mental	Ven	Venereal
Epil	Epileptic						

The column headed "Control" indicates control, or auspices under which the institution is conducted:

GOVERNMENTAL			NONPROFIT ORGANIZATIONS		PROPRIETARY	
Fed	Federal	State	Church		Indiv	Individual
IA	Indian Affairs	City	NPAssn	Nonprofit Association	Part	Partnership
Army	United States Army	County			Corp	Corporation (unrestricted as to profit)
Navy	United States Navy	City County				
USPHS	United States Public Health Service	CyCo				
Vet	Veterans Administration					

The accompanying list omits additions to hospital facilities that may have been made by certain departments of the Federal Government since the publication of the issue of March 15, 1941.

Corrections were made in the list to the time of going to press. Totals of the list, therefore, may vary from totals in Tables 1 and 2 which were necessarily compiled earlier.

ALABAMA

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Alabama City, 8,544—Etowah							
Etowah County Tuberculosis Sanatorium	TB	County	22	16	..	...	45
Albertville, 3,651—Marshall							
Sand Mountain Infirmary	Gen	Part	24	5	7	126	504
Alexander City, 6,640—Tallapoosa							
Russell Hospital	Gen	Corp	54	24	12	311	1,548
Altoona, 995—Etowah							
Klein Hospital	Gen	Indiv	27	19	3	72	794
Andalusia, 6,886—Covington							
Covington Memorial Hosp.	Gen	Part	50	21	14	185	1,565
Hillcrest Infirmary	Gen	Indiv	54	51	16	253	1,355
Anniston, 25,523—Calhoun							
Anniston Memorial Hosp▲◇	Gen	City	105	53	24	727	3,214
Susie Parker Stringfellow Memorial Hospital	TB	NPAssn	18	12	..	...	32
Athens, 4,342—Limestone							
Limestone County Hospital	Gen	Indiv	12	8	2	191	555
Atmore, 3,200—Escambia							
Atmore General Hospital	Gen	Indiv	26	9	7	120	721
Auburn, 4,652—Lee							
John Hodges Drake Hosp.	Gen	State	63	16	6	84	1,270
Bellamy, 450—Sumter							
Bellamy Hospital	Gen	NPAssn	16	3	4	35	217
Bessemer, 22,826—Jefferson							
Bessemer General Hospital	Gen	Corp	72	38	10	300	1,739
Birmingham, 267,583—Jefferson							
Baptist Hospitals✚▲◇	Gen	Church	190	164	26	867	7,691
Children's Hospital✚▲○	Chil	NPAssn	50	41	..	...	1,608
Hargis Clinic Hospital	Gen	Indiv	22	..	4	...	...
Hill Crest Sanitarium	N&M	Indiv	50	36	..	...	756
Jefferson and Hillman Hospitals★✚▲◇	Gen	County	571	455	82	2,078	16,245
Jefferson Tuberculosis Sanat.	TB	County	150	94	..	...	357
Mid South Medical Center	Ven	USPHS	250	150	..	...	8,319
Miss Quinn's Nursing Home	Conv	Part	16	8	..	...	219
Norwood Hospital★✚▲◇	Gen	Church	175	118	32	970	6,319
St. Vincent's Hospital✚▲◇	Gen	Church	135	109	15	330	4,825
Slossfield Maternity Hosp.	Mat	County	12	10	16	393	413
South Highlands Infirm★▲◇	Gen	Corp	110	121	25	815	5,459
"365" Crippled Children's Clinic▲	Orth	NPAssn	50	38	..	...	160
Brewton, 3,323—Escambia							
Escambia Hospital	Gen	Indiv	23	6	5	112	396
Cullman, 5,074—Cullman							
Cullman Hospital	Gen	CyCo	55	32	14	611	2,099
Decatur, 16,604—Morgan							
Decatur General Hospital	Gen	CyCo	39	36	11	316	1,743
Dothan, 17,194—Houston							
Dr. M. S. Davie's Private Hospital	Gen	Indiv	30	..	5	...	...
Frasier Ellis Hospital▲◇	Gen	NPAssn	66	53	10	148	1,502
Moody Hospital▲◇	Gen	Corp	70	48	16	486	2,245
East Tallassee, 3,000—Tallapoosa							
Community Hospital	Gen	NPAssn	30	12	10	201	1,132
Enterprise, 4,353—Coffee							
Gibson Hospital	Gen	NPAssn	33	25	7	167	1,463
Eufaula, 6,269—Barbour							
Salter Hospital	Gen	Indiv	54	36	9	235	1,819
Fairfield, 11,703—Jefferson							
Employees' Hospital of Tennessee Coal, Iron and Railroad Company★✚▲	Gen	NPAssn	273	153	42	916	7,403

Key to symbols and abbreviations is on this page, preceding the tabulation

ALABAMA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census†	Bassinets	Number of Births	Admissions†
Fayette, 2,668—Fayette							
McNease and Robertson Hospital▲	Gen	Part	20	11	6	105	596
Flint (Decatur P. O.), 134—Morgan							
Morgan County Tuberculosis Sanatorium	TB	County	120	120	..	...	296
Florala, 2,999—Covington							
Lakeview Hospital	*Gen*	*Indiv*	*30*	*5*	*3*	42	310
Florence, 15,043—Lauderdale							
Eliza *Coffee Memorial* Hosp.	Gen	CyCo	86	54	13	695	3,359
Fort McClellan,—Calhoun							
Regional Hospital▲	Gen	Army	200	165	2	22	5,449
Gadsden, 56,975—Etowah							
Baptist Memorial Hospital	Gen	Church	45	33	15	520	1,755
Holy Name of Jesus Hosp.▲○	Gen	Church	120	90	21	741	8,368
Greensboro, 2,034—Hale							
Greensboro *Hospital*	*Gen*	*Indiv*	*18*	4	*3*	28	206
Greenville, 5,075—Butler							
Speir Hospital	Gen	Indiv	46	13	6	150	747
Stabler Infirmary	Gen	Part	40	23	10	189	1,131
Guntersville, 4,593—Marshall							
Guntersville City Hospital.→	Gen	*City*	25	.. *No data supplied*			
Huntsville, 13,050—Madison							
Huntsville *Hospital*	*Gen*	*NPAssn*	*80*	*48*	*17*	*634*	*3,139*
Jackson, 2,039—Clarke							
South Alabama Infirmary	Gen	Corp	16	8	3	62	403
Jasper, 6,847—Walker							
Peoples Hospital○	Gen	County	65	38	8	299	2,750
Walker County Hospital	Gen	Corp	50	37	7	174	1,693
Lafayette, 2,138—Chambers							
Batson *Memorial Sanatorium*	TB	*Counties*	75	*68*	..	...	164
Langdale, 1,800—Chambers							
Langdale Hospital	*Gen*	*NPAssn*	*18*	*8*	*6*	*219*	*954*
Mobile, 78,720—Mobile							
Allen Memorial *Home*	Mat	Church	25	10	25	517	536
City Hospital★▲○	Gen	CyCo	305	186	30	713	7,589
Mobile County Tuberculosis Sanitarium	TB	NPAssn	60	33	..	...	32
Mobile Infirmary▲	Gen	NPAssn	150	153	40	1,477	6,412
Providence Hospital▲○	*Gen*	Church	117	160	32	1,321	5,951
U. S. Marine Hospital▲	Gen	USPHS	200	143	..	...	2,293
Montgomery, 78,084—Montgomery							
Fitts Hill *Hospital*	Gen	*Indiv*	*30*	19	8	*159*	*1,283*
Fraternal Hospital	Gen	Indiv	50	26	10	103	1,277
Hubbard Hospital	Gen	Indiv	35	28	4	56	1,274
Kilby Prison Hospital	Inst	State	45	30	..	...	480
Montgomery Tuberculosis Sanatorium	TB	NPAssn	100	93	..	...	185
Regional Hospital+▲	*Gen*	*Army*	*50*	*50*	*4*	28	*1,011*
St. Margaret's Hospital+▲○	Gen	Church	138	126	25	1,000	6,147
Veterans Admin. Center▲	Gen	Vet	329	257	..	...	3,160
Mount Vernon, 810—Mobile							
Searcy Hospital	Ment	State	1,526	1,577	..	...	459
Opelika, 8,487—Lee							
Opelika Hospital	Gen	CyCo	25	14	8	156	663
Pell City, 900—St. Clair							
Pell City Infirmary	Gen	Indiv	46	19	8	175	1,038
	Gen	Indiv	18	12	4	115	967
	Gen	Indiv	16	8	3	51	395
Roanoke, 4,168—Randolph							
Knight Sanatorium	Gen	Indiv	50	24	11	104	937
	Gen	Indiv	34	11	8	125	800
	Gen	Indiv	20	7	2	94	450
Tri-Counties Tuberculosis Sanatorium	TB	Counties	20	14	..	...	56
Selma, 19,834—Dallas							
Burwell Infirmary	Gen	*Part*	*38*	*16*	4	*10*	390
Goldsby King Memorial Hospital▲	Gen	NPAssn	65	43	7	28	1,327
Selma Baptist Hospital▲	Gen	NPAssn	67	42	12	228	2,800
Vaughan *Memorial* Hospital▲	Gen	Corp	35	25	6	81	1,439
Sheffield, 7,933—Colbert							
Colbert County Hospital	Gen	CyCo	80	*49*	*22*	*575*	3,245
Sylacauga, 6,269—Talladega							
Sylacauga *Hospital*	Gen	City	78	..	17	Estab. 1945	
Sylacauga Infirmary—*Drummond* Fraser Hospital▲○	*Gen*	Corp	36	25	12	162	1,543
Talladega, 9,298—Talladega							
Citizens' Hospital▲	Gen	*NPAssn*	*100*	*54*	*20*	525	*3,449*
Troy, 7,055—Pike							
Beard Memorial Hospital	Gen	Indiv	*36*	*29*	*10*	*170*	*1,500*
Edge Hospital	Gen	Indiv	35	20	8	187	1,300
Tuscaloosa, 27,493—Tuscaloosa							
Bryce Hospital	Ment	State	3,815	3,820	..	...	870
Druid City Hospital▲○	Gen	NPAssn	74	64	20	750	4,089
Stillman Institute Hospital	Gen	Church	*50*	*33*	*5*	*129*	*1,215*
Veterans Admin. *Hospital*▲	Ment	Vet	791	574	..	...	1,928
Tuskegee, 3,937—Macon							
Veterans Admin. Hospital▲⊙	Ment	Vet	1,931	1,674	..	...	3,533
Tuskegee Institute, 375—Macon							
John Albion Andrew Memorial *Hospital*○	Gen	NPAssn	83	75	12	190	1,922
Wetumpka, 3,089—Elmore							
Wetumpka General Hospital	Gen	Corp	40	19	7	150	800
York, 1,783—Sumter							
Hill Hospital	*Gen*	*Indiv*	20	11	4	62	657

ALABAMA—Continued

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census†	Bassinets	Number of Births	Admissions†
Birmingham, 267,583—Jefferson							
Alabama *Boys' Industrial* School	Inst	State	29	7	..	...	688
Salvation *Army Home and* Hospital	Mat	Church	45	9	25	123	*150*
Montevallo 1,490—Shelby							
Peterson Hall	Inst	State	36	4	..	...	1,257
Talladega, 9,298—Talladega							
Goodnow Hospital	*Gen*	*Church*	78	1	1	...	*34*
Tuscaloosa, 27,493—Tuscaloosa							
Partlow *State School*	*McDc*	*State*	*853*	*840*	..	...	*56*

ARIZONA

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census†	Bassinets	Number of Births	Admissions†
Ajo, 1,100—Pima							
Phelps-Dodge Hospital	Gen	NPAssn	35	12	7	118	627
Bisbee, 5,853—Cochise							
Copper Queen Hospital	Gen	NPAssn	42	16	8	181	1,015
Chinle, 65—Apache							
Chinle General Hospital	Gen	IA	15	13	3	57	562
Coolidge, 1,200—Pinal							
Burton Cairns General Hosp.	Gen	NPAssn	61	.. No data supplied			
Douglas, 8,623—Cochise							
Cochise County Hospital	Gen	County	87	65	4	24	548
Flagstaff, 5,080—Coconino							
Flagstaff Hospital	Gen	NPAssn	25	12	6	176	841
Florence, 1,383—Pinal							
Pinal County Hospital	Gen	County	48	24	8	192	886
Fort Defiance, 600—Apache							
Fort Defiance Sanatorium	*Unit of Navajo Medical Center Hospital and Sanatorium*						
Navajo Medical Center Hospital and Sanatorium▲	GenTb	IA	250	179	14	138	2,308
Fort Huachuca, 1,500—Cochise							
Station Hospital▲	Gen	Army	48	31	1	12	862
Ganado, 150—Apache							
Sage Memorial Hospital▲○	Gen	Church	150	85	15	155	1,805
Globe, 6,141—Gila							
Gila County Hospital	Gen	County	60	32	8	250	906
Holbrook, 1,184—Navajo							
Holbrook Municipal Hosp.	Gen	*City*	10	8	4	*33*	183
Jerome, 2,295—Yavapai							
United Verde Hospital▲	Gen	*NPAssn*	*52*	*19*	*8*	68	803
Keams Canyon, 150—Navajo							
Hopi *General Hospital*	Gen	*IA*	*39*	*26*	*3*	*43*	624
Kingman, 2,200—Mohave							
Mohave *General Hospital*	Gen	*County*	*41*	*31*	*15*	*275*	*1,050*
McNary, 55—Apache							
McNary Hospital	Gen	NPAssn	12	3	2	25	248
	Gen	NPAssn	75	44	18	368	2,263
	Gen	NPAssn	45	20	8	191	1,105
	Gen	NPAssn	58	17	8	241	1,021
	Gen	Church	30	30	8	263	...
Oracle, 200—Pinal							
La Casa del Encanto	N&M	Indiv	8	..	..	...	42
Parker, 200—Yuma							
Colorado River Indian Agency Hospital	Gen	IA	28	9	4	30	231
Phoenix, 65,414—Maricopa							
Arizona State Hospital	Ment	State	1,165	1,136	..	...	626
Convalescent Home for Crip-	Orth	State	50	48	..	...	295
l★▲○	*Gen*	Church	200	161	35	952	7,827
▲	Gen	IA	60	43	10	128	950
um▲	TB	IA	130	81	..	...	227
▲	Gen	Church	200	170	40	2,007	10,859
	TB	*Church*	72	27	..	...	120
and Health Center★▲	Gen	Church	175	127	18	650	5,801
Prescott, 6,018—Yavapai							
Prescott Community Hosp.	Gen	NPAssn	48	19	14	148	952
Yavapai County Hospital	Gen	County	70	35	10	60	474
Ray, 1,100—Pinal							
Kennecott Copper Corporation Hospital	Gen	NPAssn	20	12	6	60	486
Sacaton, 315—Pinal							
Pima Indian Hospital	Gen	IA	42	28	7	91	682
Safford, *2,266—Graham*							
Morris-Squibb Hospital	Gen	NPAssn	35	9	10	142	400
San Carlos, 160—*Gila*							
San Carlos Indian Hospital	Gen	IA	47	42	6	29	724
Sells, 800—Pima							
Indian Oasis Hospital	Gen	IA	26	27	5	44	644
Tempe, 2,906—Maricopa							
State Welfare Sanatorium	TB	State	95	*90*	..	...	84
Tempe Clinic-Hospital	Gen	Indiv	25	11	*14*	317	*520*
Tuba City, 150—Coconino							
Western Navajo Hospital▲	Gen	IA	41	24	6	*61*	673
Tucson, 36,818—*Pima*							
Anson Rest Home	TB	Part	23	31	..	...	26
Barfield Sanatorium	TB	Indiv	22	*16*	..	...	*63*
Comstock Children's Hosp.	TB	NPAssn	22	12	..	...	12
Pima County General Hosp.▲	GenTb	County	126	65	*10*	*6*	2,572
St. Luke's in the Desert Sanitarium	TB	Church	22	22	..	...	26

Key to symbols and abbreviations is on page 1091

ARIZONA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
St. Mary's Hospital and Sanatorium+▲○	GenTb	Church	200	172	36	1,091	6,197
San Xavier Sanatorium	TB	IA	46	27	.	...	74
Southern Pacific Sanat ▲	TB	NPAssn	82	44	..	.	93
Tucson Medical Center	Gen	NPAssn	100	56	30	429	1,291
Veterans Admin. Hospital▲	TB	Vet	428	359	..	...	1,629
Whipple,—Yavapai							
Veterans Admin. Hospital▲	TB	Vet	527	330	..	...	1,501
Whiteriver, 300—Navajo							
Fort Apache Agency Hosp	Gen	IA	48	31	4	35	663
Wickenburg, 995—Maricopa							
Wickenburg Hospital	Gen	NPAssn	21	10	6	48	440
Winslow, 4,577—Navajo							
Winslow Indian Sanatorium▲	TB	IA	60	55	..	...	422
Yuma, 5,325—Yuma							
Fort Yuma Indian Hosp ▲	Gen	IA	28	13	8	32	456
Yuma County General Hosp.	Gen	County	60	...	12	...	...

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Kayenta, 40—Navajo							
Kayenta Indian Sanat ▲	TB	IA	51	..	2	...	...
Phoenix, 65,414—Maricopa							
Eva M. Harris Maternity Home	Mat	Indiv	17	10	15	406	414
Tucson, 36,818—Pima							
Arizona State Elks Association Hospital	TB	NPAssn	32	20	..	...	43
Valentine, 110—Mohave							
Truxton Canyon Hospital	Gen	IA	16	8	6	17	173

ARKANSAS

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Alexander, 134—Pulaski							
Thomas C McRae Memorial Sanatorium	TB	State	195	186	..	...	167
Batesville, 5,247—Independence							
Craig Hospital	Gen	Indiv	12	10	6	93	585
Dr. Gray's Hospital	Gen	Indiv	50	23	8	89	1,580
Beebe, 1,189—White							
Sloan Hospital	Gen	Indiv	12	9	6	120	458
Benton, 3,502—Saline							
State Hospital	Unit of State Hospital, Little Rock						
Blytheville, 10,652—Mississippi							
Blytheville Hospital	Gen	Indiv	35	20	6	200	825
Walls Hospital	Gen	Indiv	34	24	6	159	1,718
Camden, 8,975—Ouachita							
Camden Hospital	Gen	NPAssn	50	38	15	447	3,030
Charleston, 958—Franklin							
Bollinger Hospital	Gen	Indiv	12	3	4	112	152
Clarksville, 3,118—Johnson							
St Hildegard's Municipal Hospital	Gen	Church	26	15	10	227	1,100
Conway, 5,782—Faulkner							
Conway Memorial Hospital	Gen	NPAssn	30	16	10	161	849
Crossett, 4,891—Ashley							
Crossett Hospital	Gen	NPAssn	38	17	10	96	1,489
De Queen, 3,055—Sevier							
Archer Hospital	Gen	Indiv	22	12	4	80	420
De Queen General Hospital	Gen	Part	28	18	8	133	1,193
Dermott, 3,083—Chicot							
Dermott Municipal Hospital	Gen	Church	30	16	6	121	698
Dumas, 2,323—Desha							
Dumas Hospital	Gen	Corp	25	9	8	130	500
El Dorado, 15,858—Union							
Warner Brown Hospital▲○	Gen	Church	77	69	14	577	2,875
Fayetteville, 8,212—Washington							
Fayetteville City Hospital▲	Gen	City	70	46	20	500	2,636
Veterans Admin. Hospital▲	Gen	Vet	305	231	..	...	2,091
Fort Smith, 36,584—Sebastian							
Arkansas Tuberculosis Sanat.	Unit of Arkansas Tuberculosis Sanatorium, State Sanatorium, Ark.						
St. Edward's Mercy Hosp▲○	Gen	Church	145	125	36	1,097	5,051
Sparks' Memorial Hospital▲○	Gen	NPAssn	100	66	18	407	3,560
Haskell, 171—Saline							
State Hosp, Benton Division	Unit of State Hospital, Little Rock						
Heber Springs, 1,656—Cleburne							
Estelle Hospital	Gen	Indiv	22	18	5	213	750
Helena, 8,546—Phillips							
Helena Hospital	Gen	NPAssn	70	32	10	234	1,587
Hope, 7,475—Hempstead							
Josephine Hospital	Gen	Indiv	22	10	4	64	433
Julia Chester Hospital	Gen	NPAssn	30	18	8	198	1,059
Hot Springs National Park, 21,370—Garland							
Army and Navy Gen. Hosp.+▲	Gen	Army	412	369	3	10	3,098
Leo N. Levi Memorial Hospital+▲○	Gen	NPAssn	95	71	5	122	1,026
St. Joseph's Infirmary▲○	Gen	Church	144	135	16	583	4,729
U. S. Public Health Service Medical Center	Ven	USPHS	100	76	4	...	4,642
Jonesboro, 11,729—Craighead							
St. Bernard's Hospital▲○	Gen	Church	100	82	12	495	3,434
Lake Village, 2,045—Chicot							
Lake Village Infirmary	Gen	Part	40	20	5	125	1,264
Little Rock, 88,039—Pulaski							
Arkansas Children's Home and Hospital▲	Chil	NPAssn	75	45	8	...	685
Baptist State Hospital*+▲○	Gen	Church	300	216	40	959	8,527
Florence Crittenton Home and Hospital	Mat	NPAssn	30	25	12	67	95

ARKANSAS—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Granite Mountain Hospital	Gen	Indiv	20	4	2	18	280
Missouri Pacific Hospital▲	Indus	NPAssn	125	49	..	...	2,047
Pulaski County Hospital	GenInst	County	212	179	2	...	281
St. Vincent Infirmary*▲○	Gen	Church	200	195	50	1,701	8,793
State Hospital	Ment	State	4,705	4,778	..	...	1,918
Trinity Hospital	Gen	Part	40	14	10	96	1,113
United Friends of America Hospital	Gen	NPAssn	25	18	2	53	462
University Hospital*▲	Gen	State	210	137	20	721	8,709
Magnolia, 4,326—Columbia							
City Hospital	Gen	City	23	22	7	204	1,113
Magnolia Sanitarium	Gen	Part	20	10	2	49	1,136
Monticello, 3,650—Drew							
Mack Wilson Hospital	Gen	Indiv	30	15	4	80	900
Morrilton, 4,608—Conway							
St. Anthony's Hospital▲	Gen	Church	36	32	9	295	1,450
Newport, 4,521—Jackson							
Dr. Gray's Hospital	Gen	Indiv	25	18	6	151	4,801
Paragould, 7,079—Greene							
Dickson Memorial Sanit.	Gen	Corp	34	26	11	239	1,524
Pine Bluff, 21,290—Jefferson							
Davis Hospital▲	Gen	City	120	90	20	883	3,853
Prescott, 3,177—Nevada							
Cora Donnell Hospital	Gen	Indiv	25	18	8	164	1,129
Rogers, 3,550—Benton							
Rogers Hospital	Gen	Indiv	14	..No data supplied			
Searcy, 3,670—White							
Hawkins Clinic Hospital	Gen	Indiv	26	11	7	113	692
Porter Rodgers Hospital	Gen	Indiv	50	48	14	277	3,099
Siloam Springs, 2,764—Benton							
John Brown University Hosp	Gen	NPAssn	26	10	5	96	785
State Sanatorium, 500—Logan							
Arkansas Tuberculosis Sanat ▲	TB	State	1,154	1,036	..	...	1,422
Texarkana, 11,821—Miller							
Michael Meagher Memorial Hospital▲	Gen	Church	55	52	12	755	2,700
St Louis Southwestern Hospital▲	Indus	NPAssn	150	74	..	3	3,334
Veterans Admin Facility,—Pulaski							
Veterans Admin Hospital▲	Ment	Vet	1,899	1,500	..	...	1,315
Warren, 2,516—Bradley							
Hunt Hospital	Gen	Indiv	22	9	6	105	486

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Booneville, 2,324—Logan							
McConnell Hospital	Gen	Indiv	15	4	6	65	300

CALIFORNIA

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Agnew, 300—Santa Clara							
Agnews State Hospital	Ment	State	3,725	3,663	..	...	1,189
Ahwahnee, 50—Madera							
Ahwahnee Sanatorium	TB	Counties	101	89	..	...	101
Alameda, 36,256—Alameda							
Alameda Hospital▲	Gen	NPAssn	97	70	22	734	3,659
U. S. Naval Air Station Dispensary	Gen	Navy	291	241	..	...	10,994
Albany, 11,493—Alameda							
Albany Hospital	Gen	Indiv	35	32	20	891	1,966
Alcatraz,—San Francisco							
U. S. Penitentiary Hosp ▲	Inst	USPHS	20	8	..	...	207
Alhambra, 38,935—Los Angeles							
Alhambra Hospital▲	Gen	Corp	40	34	18	713	2,725
Angel Island, 478—Marin							
Station Hospital	Gen	Army	70	41	..	...	1,581
Antioch, 5,106—Contra Costa							
Antioch Hospital	Gen	Indiv	20	15	8	414	1,738
Arcata, 1,855—Humboldt							
Trinity Hospital	Gen	Church	33	24	7	98	1,146
Arlington, 3,440—Riverside							
Riverside County Hospital	See Riverside						
Artesia, 3,891—Los Angeles							
Artesia Hospital	Gen	Indiv	25	17	9	516	1,274
Atwater, 1,235—Merced							
Bloss Memorial Hospital	Unit of Merced General Hospital, Merced						
Auberry, 200—Fresno							
Wish i ah Sanatorium	TB	County	116	102	..	...	119
Auburn, 4,013—Placer							
Highland General Hospital	Gen	Part	30	28	8	198	1,074
Placer County Hospital	Gen	County	156	92	5	34	572
Bakersfield, 29,252—Kern							
Kern General Hospital+▲	Gen	County	375	246	44	981	7,676
Mercy Hospital▲	Gen	Church	119	114	30	1,163	6,092
[illegible]							
[illegible]	TB	Indiv	35	18	..	...	29
[illegible]							
Bell Mission Hospital	Gen	Corp	32	24	13	517	1,470
Belmont, 1,229—San Mateo							
Alexander Sanitarium	N&M	Corp	75	74	..	...	416
California Sanatorium	TB	Corp	100	76	..	...	271
Twin Pines Sanitarium	N&M	Corp	50	26	..	...	297
Berkeley, 85,547—Alameda							
Alta Bates Hospital▲	Gen	Corp	116	87	42	1,750	5,222
Berkeley Hospital▲	Gen	NPAssn	90	67	25	1,100	[illegible]
Ernest V. Cowell Memorial Hospital▲	Inst	State	100	33	..	...	2,055
Brawley, 11,718—Imperial							
Brawley Community Hosp	Gen	Indiv	22	20	9	242	991

CALIFORNIA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Burbank, 34,337—Los Angeles							
St. Joseph's Hospital▲.......	Gen	Church	115	99	25	1,149	4,217
Camarillo, 600—Ventura							
Camarillo State Hospital ...	Ment	State	4,579	4,150	..	...	1,849
Carmel, 2,837—Monterey							
Peninsula Community Hosp.	Gen	NPAssn	53	38	13	353	2,007
Chula Vista, 5,138—San Diego							
U. S Naval Air Station Dispensary	Gen	Navy	50	6	..	...	802
Clovis, 1,626—Fresno							
Clovis Sanitarium	Gen	Part	16	8	4	60	365
Coalinga, 5,026—Fresno							
Pleasant Valley Hospital ...	Gen	NPAssn	16	11	6	144	600
Colfax, 794—Placer							
Bushnell Sanatorium	Unit of Colfax School for the Tuberculous						
Colfax Hospital	Unit of Colfax School for the Tuberculous						
Colfax School for the Tuberculous	TB	Indiv	34	25	..	...	55
Colusa, 2,285—Colusa							
Colusa County Memorial Hospital	Gen	County	32	26	8	150	924
Compton, 16,198—Los Angeles							
Compton Sanitarium+▲○	N&M	Corp	123	86	..	.	687
Las Campanas Hospital▲ . .	Gen	Corp	46	41	13	765	2,260
Women's and Children's Hospital	Gen	Indiv	20	12	7	142	706
Concord, 1,373—Contra Costa							
Concord Hospital	Gen	Indiv	50	15	14	290	1,591
Corona, 8,764—Riverside							
U. S. Naval Hospital★▲......	Gen	Navy	4,003	3,533	..	...	10,457
Coronado, 6,932—San Diego							
Coronado Hospital	Gen	NPAssn	30	14	8	98	624
Covina, 3,049—Los Angeles							
Covina Hospital	Gen	Part	50	41	10	374	1,627
Crescent City, 1,063—Del Norte							
Knapp Hospital	Gen	NPAssn	24	13	5	72	1,019
Culver City, 8,976—Los Angeles							
Community Hospital	Gen	Indiv	15	10	6	260	627
Culver City Hospital.........	Gen	Indiv	50	33	14	276	1,493
Delano, 4,573—Kern							
Delano Hospital	Gen	Indiv	30	17	7	230	972
Dinuba, 3,790—Tulare							
Alta District Hospital........	Gen	Part	17	8	4	163	514
Dos Palos, 978—Merced							
Dos Palos Community Hosp	Gen	Part	17	9	5	181	647
Downey, 15,000—Los Angeles							
Downey Community Hospital	Gen	Corp	35	24	14	431	1,558
Duarte, 2,000—Los Angeles							
Los Angeles Sanatorium+▲...	TB	NPAssn	232	228	..	...	115
Dunsmuir, 2,359—Siskiyou							
Dunsmuir Hospital	Gen	Part	16	6	6	91	584
El Centro, 10,017—Imperial							
Imperial County Charity Hospital	Gen	County	106	67	5	49	974
U. S. Marine Corps Air Station Dispensary	Gen	Navy	108	29	..	...	41
Eldridge, 16—Sonoma							
Sonoma State Home.........	MeDe	State	3,246	3,306	..	...	446
El Monte, 4,746—Los Angeles							
Ruth Home	VenMat	NPAssn	135	48	15	13	120
El Toro,—Orange							
U. S. Marine Corps Air Station Dispensary	Gen	Navy	147	60	..	...	4,172
Escondido, 4,560—San Diego							
Escondido Community Hosp.	Gen	Indiv	20	16	6	241	610
Eureka, 17,055—Humboldt							
General Hospital	Gen	NPAssn	58	41	11	174	1,979
Humboldt County Community Hospital	Gen	County	223	136	6	21	645
Humboldt County Sanit.....	TB	County	65	38	..	. .	88
St. Joseph Hospital..........	Gen	Church	72	52	20	389	2,457
Fairfield, 1,312—Solano							
Solano County Hospital. ...	Gen	County	110	105	6	75	738
Fort Bragg, 3,235—Mendocino							
Redwood Coast Hospital▲. .	Gen	Corp	27	15	8	96	560
Fowler, 1,531—Fresno							
Fowler Municipal Hospital	Gen	City	10	7	4	163	454
French Camp, 600—San Joaquin							
San Joaquin General Hospital★+▲○	Gen	County	504	405	38	627	8,838
Fresno, 60,685—Fresno							
Fresno Community Hospital	Gen	NPAssn	140	128	24	1,105	6,051
General Hospital of Fresno County★+▲○	Gen	County	550	410	31	428	6,029
St. Agnes Hospital▲	Gen	Church	100	88	20	1,135	4,000
Fullerton, 10,442—Orange							
Fullerton Hospital▲	Gen	Church	45	35	11	509	1,619
Gilroy, 3,615—Santa Clara							
Wheeler Hospital	Gen	NPAssn	25	15	8	200	749
Glendale, 82,582—Los Angeles							
Glendale Sanitarium and Hospital★▲○	Gen	Church	225	200	40	1,459	6,178
Physicians and Surgeons Hospital▲	Gen	NPAssn	110	103	35	1,482	4,989
Grass Valley, 5,701—Nevada							
Community Hospital	Gen	Indiv	20	12	6	133	729
W. C. Jones Memorial Hosp.	Gen	Indiv	30	9	3	31	303
Hamilton Field,—Marin							
Regional and Air Debarkation Hospital+▲	Gen	Army	66	25	..	...	1,005

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Hanford, 8,234—Kings							
Hanford Sanitarium	Gen	Corp	30	28	8	344	1,2[illegible]8
Kings County Hospital......	Gen	County	225	153	16	111	1,743
Sacred Heart Hospital.......	Gen	Church	30	25	12	327	1,304
Hawthorne, 8,263—Los Angeles							
Hawthorne Hospital	Gen	Part	13	[illegible]8	15	431	1,696
Hayward, 6,736—Alameda							
Hayward Hospital	Gen	Indiv	31	21	15	657	1,738
Healdsburg, 2,507—Sonoma							
Healdsburg General Hosp....	Gen	NPAssn	25	8	6	100	630
Hollister, 3,881—San Benito							
Hazel Hawkins Memorial Hospital	Gen	NPAssn	22	16	8	234	719
San Benito County Hosp ...	InstGen	County	40	32	3	5	60
Holtville, 1,772—Imperial							
U. S. Naval Air Station Dispensary	Gen	Navy	49	2	..	...	681
Hondo, 3,150—Los Angeles							
Rancho Los Amigos.........	Ment	County	2,844	2,300	..	...	1,499
Hoopa, 140—Humboldt							
Hoopa Valley Indian Hosp...	Gen	IA	29	11	6	25	206
Huntington Park, 28,648—Los Angeles							
Mission Hospital▲	Gen	Corp	43	37	18	723	1,843
Imola, 20—Napa							
Napa State Hospital.........	Ment	State	4,123	4,580	..	...	1,193
Indio, 2,296—Riverside							
Casita Hospital	Gen	Indiv	26	15	8	160	781
Coachella Valley Hospital ...	Gen	Part	30	17	6	128	1,062
Inglewood, 30,114—Los Angeles							
Centinela Hospital	Gen	Indiv	88	64	19	545	2,987
Inglewood Women's Hospital	Mat	Part	27	10	27	519	526
St. Erne Sanitarium..	N&M	Indiv	200	195	..	...	226
Keene, 164—Kern							
Stony Brook Retreat	TB	County	102	91	..	...	84
King City, 1,768—Monterey							
Community Hospital	Gen	Indiv	24	16	6	106	1,651
[illegible]							
[illegible] .	Gen	Indiv	16	13	4	165	661
[illegible]							
Hillcrest Sanatorium	Unit of Olive View Sanatorium, Olive View						
La Jolla,—San Diego							
Scripps Memorial Hospital▲ .	Gen	NPAssn	56	39	12	312	2,009
Scripps Metabolic Clinic......	Metab	NPAssn	35	29	..	...	1,[illegible]65
La Vina, 35—Los Angeles							
La Vina Sanatorium	TB	NPAssn	49	48	..	...	33
Lindsay, 4,397—Tulare							
Lindsay Municipal Hospital .	Gen	City	24	20	8	253	1,590
Livermore, 2,885—Alameda							
Arroyo Del Valle Sanatorium	See Oakland						
Livermore Sanitarium+	N&M	Corp	112	108	..	...	608
St. Paul's Hospital	Gen	Indiv	25	17	8	202	1,001
U S Naval Air Station Dispensary	Gen	Navy	80	18	..	...	916
Veterans Admin Hospital▲..	TB	Vet	402	302	..	...	509
Lodi, 11,079—San Joaquin							
Buchanan Hospital	Gen	Indiv	40	23	9	267	993
Mason Hospital	Gen	Indiv	30	25	5	165	856
Loma Linda, 2,500—San Bernardino							
Loma Linda Sanitarium and Hospital★▲○	Gen	Church	133	140	12	432	4,070
Lompoc, 3,379—Santa Barbara							
Lompoc Community Hosp ..	Gen	NPAssn	26	16	10	187	781
Lone Pine, 900—Inyo							
Mount Whitney Hospital .. .	Gen	Indiv	13	..No data supplied			
Long Beach, 164,271—Los Angeles							
Bixby Knolls Maternity Hospital	Mat	Part	24	19	27	707	717
Harriman Jones Clinic Hospital▲	Gen	Part	48	38	7	282	1,293
Long Beach Community Hospital▲	Gen	NPAssn	1[illegible]8	135	28	1,435	7,549
St Mary's Long Beach Hospital▲	Gen	Church	100	99	30	1,116	5,123
Seaside Memorial Hospital▲.	Gen	NPAssn	445	300	55	2,[illegible]63	19,0[illegible]8
U. S. Naval Hospital★+▲....	Gen	Navy	[illegible],270	3,367	40	614	25,424
Los Alamitos,—Orange							
U. S Naval Air Station Dispensary	Gen	Navy	88	6	..	. .	2,379
Los Angeles, 1,504,277, Los Angeles							
Alvarado Hospital .	Gen	NPAssn	2[illegible]	21	6	5	.
Barlow Sanatorium+▲○	TB	NPAssn	100	97	.	...	71
California Babies' and Children's Hospital+	Chil	NPAssn	30	6	.	. .	391
California Hospital★+▲○ .	Gen	Church	301	[illegible]07	48	2,383	13,030
Cedars of Lebanon Hosp ★+▲	Gen	NPAssn	[illegible]10	[illegible]	50	1,793	10,272
Children's Hospital+▲○ ...	Chil	NPAssn	203	155	..	...	4,910
Eye and Ear Hospital . .	ENT	Corp	26	20		.	1,9[illegible]9
French Hospital . . .	Gen	NPAssn	89	54	20	308	2,121
Golden State Hospital▲ . .	Gen	Indiv	63	33		. .	8[illegible]3
Hollywood Leland Hospital	Gen	Corp	70	27	.	...	1,436
Hospital of the Good Samaritan★+▲○ .	Gen	Church	400	309	55	1,841	10,531
Hygeia Sanatorium	Alcoh	Indiv	10	7	..	.	312
Juvenile Hall Hospital .	Inst	County	121	103	..	. .	6,909
Lincoln Hospital . .	Gen	NPAssn	[illegible]0	2[illegible]	12	776	1,625
Los Angeles County Hospital (Medical Unit)★+▲○	Gen	County	3,794	2,426	217	2,797	4[illegible],835
Los Angeles County Jail Hospital . ..	Inst	County	61	53	..	.	2,10[illegible]
Los Angeles County Psychopathic Hospital . .	Unit of Los Angeles County Hospital						

Key to symbols and abbreviations is on page 1091

CALIFORNIA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Los Angeles Neurological Institute	N&M	Indiv	40	22	..	...	133
Los Angeles Sanitarium	Gen	Indiv	37	9	..	...	174
Methodist Hospital of Southern California▲○	Gen	Church	200	173	45	1,773	8,134
Orthopaedic Hospital+▲○	Orth	NPAssn	75	60	..	...	2,364
Pahl Hospital	Gen	Indiv	15	10	3	94	448
Presbyterian Hospital—Olmsted Memorial★▲○	Gen	Church	284	226	65	1,829	9,522
Queen of Angels Hosp ★+▲○	Gen	Church	325	279	64	2,403	10,877
St. Vincent's Hospital★+▲○	Gen	Church	250	245	50	1,400	12,342
Santa Fe Coast Lines Hospital★+▲	Indus	NPAssn	197	175	..	...	4,953
Veterans Admin. Center	See West Los Angeles						
White Memorial Hosp ★+▲○	Gen	Church	230	184	40	1,571	9,612
Los Banos, 2,214—Merced							
City Clinic and Emergency Hospital	Gen	Church	15	10	3	100	461
Madera, 6,457—Madera							
Dearborn Hospital	Gen	Indiv	29	24	7	250	1,276
Madera County Hospital	GenTb	County	135	76	8	71	690
Madera Sanitarium	Gen	Indiv	21	14	3	191	961
Manor,—Marin							
Arequipa Sanatorium	TB	NPAssn	45	41	..	...	50
March Field,—Riverside							
Station Hospital▲	Gen	Army	75	33	5	65	1,080
Mare Island,—Solano							
U. S Naval Hospital★▲	Gen	Navy	1,915	1,876	32	583	13,786
Martinez, 7,381—Contra Costa							
Contra Costa County Hosp	Gen	County	216	163	11	152	2,080
Martinez Community Hosp	Gen	Corp	42	36	10	335	2,156
Marysville, 6,646—Yuba							
Rideout Memorial Hospital	Gen	Part	45	35	10	275	2,023
Yuba County Hospital	Gen	County	87	73	6	57	809
McCloud, 2,000—Siskiyou							
McCloud Hospital	Gen	NPAssn	24	10	6	56	402
Merced, 10,135—Merced							
Merced General Hospital	GenTb	County	150	145	20	363	3,423
Mercy Hospital	Gen	Indiv	50	32	22	509	1,983
Modesto, 16,379—Stanislaus							
McPheeters Hospital	Gen	Indiv	48	45	12	331	2,372
Robertson Hospital	Gen	Indiv	38	35	12	452	1,640
St. Mary's Hospital	Gen	Church	23	17	8	298	1,194
Stanislaus County Hospital	Gen	County	250	172	9	271	2,457
Moffett Field,—Santa Clara							
U. S Naval Air Station Dispensary	Gen	Navy	71	33	..	...	2,041
Mojave, 750—Kern							
U. S. Marine Corps Air Station Dispensary	Gen	Navy	77	17	..	...	882
Monrovia, 12,807—Los Angeles							
Norumbega Sanatorium	TB	Indiv	18	14	..	...	20
Pottenger Sanatorium and Clinic+▲	TB	Corp	70	56	..	...	110
Montebello, 8,016—Los Angeles							
Beverly Hospital	Gen	NPAssn	58	28	18	592	2,111
Monterey, 10,084—Monterey							
Monterey Hospital	Gen	NPAssn	56	46	15	497	2,422
Monterey Park, 8,531—Los Angeles							
Garfield Hospital▲	Gen	Corp	38	36	12	493	1,487
Murphys, 600—Calaveras							
Bret Harte Sanatorium+▲	TB	Counties	159	116	..	...	173
Napa, 7,740—Napa							
Victory Hospital▲	Gen	Corp	65	37	14	466	1,843
National City, 10,344—San Diego							
Elwyn Hospital	Gen	Part	10	7	5	85	586
Paradise Valley Sanitarium and Hospital+▲○	Gen	Church	145	112	25	873	4,113
Nevada City, 2,445—Nevada							
Miners Hospital	Gen	NPAssn	20	13	4	95	612
Nevada City Sanitarium	Gen	Indiv	9	3	5	57	169
Nevada County Hospital	Gen	County	100	56	4	3	375
Newhall, 1,800—Los Angeles							
Wildwood Sanatorium	Unit of Olive View Sanatorium, Olive View						
Newman, 1,214—Stanislaus							
West Side Hospital	Gen	Corp	16	15	3	150	732
Norwalk, 3,000—Los Angeles							
Norwalk State Hospital	Ment	State	2,490	2,408	..	...	679
Oakland, 302,163—Alameda							
Alameda County Hospitals							
Arroyo-Del Valle Sanat.+▲○	TB	County	275	201	..	...	232
Fairmont Hospital of Alameda County+▲○	GenTb	County	750	741	..	...	985
Highland Alameda County Hospital★+▲○	Gen	County	485	280	26	713	7,454
Children's Hospital of the East Bay+▲○	Chil	NPAssn	78	62	..	...	3,419
East Oakland Hospital▲	Gen	Corp	80	63	26	1,234	4,050
Peralta Hospital▲	Gen	NPAssn	160	129	40	1,467	7,797
Permanente Foundation Hospital★+▲	Gen	NPAssn	300	220	24	310	8,910
Providence Hospital▲○	Gen	Church	221	177	43	1,820	8,427
Samuel Merritt Hospital+▲○	Gen	NPAssn	188	175	43	1,682	7,762
U. S. Naval Hospital★+▲	Gen	Navy	5,545	4,966	102	2,431	53,299
Oceanside, 4,651—San Diego							
U. S Naval Hospital★▲	Gen	Navy	2,000	1,292	20	370	11,455
Olive View,—Los Angeles							
Olive View Sanatorium+▲	TB	County	957	901	..	...	709
Orange, 7,901—Orange							
Orange County General Hospital★+▲○	Gen	County	373	244	14	93	2,425
St. Joseph Hospital▲○	Gen	Church	115	119	26	1,557	5,175
Oxnard, 8,519—Ventura							
St. John's Hospital▲	Gen	Church	48	37	15	275	1,424
Palo Alto, 16,774—Santa Clara							
Palo Alto Hospital▲	Gen	NPAssn	165	153	43	1,433	6,817
Veterans Admin. Hospital▲	Ment	Vet	1,345	1,318	..	...	868
Pasadena, 81,864—Los Angeles							
Collis P. and Howard Huntington Memorial Hosp ★+▲○	Gen	NPAssn	209	210	35	1,334	9,396
Las Encinas Sanitarium	Nerv & IntMed	Corp	90	114	..	...	186
Pasadena Lutheran Hospital	Gen	Church	65	53	15	371	...
St. Luke's Hospital▲	Gen	Church	150	115	50	1,115	4,690
Southern California Sanitarium for Nervous and General Diseases	See Las Encinas Sanitarium						
Woman's Hospital	Mat	NPAssn	14	11	14	409	429
Patton, 4,100—San Bernardino							
Patton State Hospital	Ment	State	4,195	4,009	..	...	1,636
Pittsburg, 9,520—Contra Costa							
Pittsburg Community Hosp	Gen	City	52	...	16	Estab. 1945	
Placerville, 3,064—El Dorado							
El Dorado County Hospital	InstGen	County	64	55	4	4	80
Placerville Sanatorium	Gen	Part	30	16	8	122	709
Pomona, 23,539—Los Angeles							
Pomona Valley Community Hospital▲	Gen	NPAssn	82	49	22	534	2,446
Porterville, 6,270—Tulare							
New Porterville Hospital	Gen	Part	22	18	9	479	1,199
Port Hueneme, 2,000—Ventura							
U. S. Naval Dispensary	Gen	Navy	476	252	12	73	5,297
Portola, 2,000—Plumas							
Western Pacific Railway Hospital	Gen	NPAssn	30	17	5	96	757
Quincy, 1,800—Plumas							
Plumas County Hospital	Gen	County	45	15	6	10	263
Randsburg, 500—Kern							
Rand District Hospital	Gen	Indiv	14	10	5	50	568
Red Bluff, 3,824—Tehama							
St. Elizabeth's Mercy Hosp	Gen	Church	50	40	10	...	1,000
Tehama County Hospital	Gen	County	56	48	8	49	367
Redding, 8,109—Shasta							
Shasta County Hospital	InstGen	County	54	52	12	19	372
Redlands, 14,324—San Bernardino							
Redlands Community Hosp	Gen	NPAssn	56	40	20	374	1,955
Redwood City, 12,453—San Mateo							
Canyon Sanatorium	TB	County	75	54	..	...	35
Hassler Health Home	TB	CyCo	268	187	..	...	143
Reedley, 3,170—Fresno							
Reedley Hospital	Gen	NPAssn	22	16	9	260	1,285
Represa, 250—Sacramento							
Folsom Prison Hospital	Inst	State	120	38	..	...	840
Richmond, 23,642—Contra Costa							
Permanente Field Hospital	Unit of Permanente Foundation Hospital, Oakland						
Richmond Hospital▲	Gen	Indiv	70	60	24	1,734	4,647
Riverside, 34,696—Riverside							
Riverside Community Hosp ▲	Gen	NPAssn	100	96	60	1,311	4,318
Riverside County Hospital▲	GenTb	County	351	191	23	96	2,077
Sherman Institute Hospital	Inst	IA	52	6	..	...	224
Rosemead, 5,500—Los Angeles							
Alhambra Sanatorium	N&M	Indiv	20	15	..	...	103
Ross, 1,751—Marin							
Ross General Hospital	GenTb	Corp	90	81	12	411	2,393
Sacramento, 105,958—Sacramento							
Mercy Hospital▲○	Gen	Church	177	154	35	1,471	7,039
Sacramento County Hospital★▲○	Gen	County	475	263	25	354	6,935
Sutter General Hospital▲	Gen	NPAssn	250	174	..	...	6,464
Sutter Maternity Hospital▲	Mat	NPAssn	80	59	78	2,527	2,850
Salinas, 11,586—Monterey							
El Sausal Sanitarium	Unit of Monterey County Hospital						
Monterey County Hospital+▲	GenTb	County	230	154	10	108	1,903
Park Lane Hospital	Gen	Corp	58	42	18	498	2,005
Salinas Valley Hospital	Gen	Indiv	29	25	0	183	1,808
San Andreas, 1,082—Calaveras							
San Andreas Hospital	Gen	Indiv	12	3	2	16	130
San Bernardino, 43,646—San Bernardino							
St. Bernardine's Hospital▲	Gen	Church	125	110	24	1,000	4,457
San Bernardino County Charity Hospital★+▲○	Gen	County	324	253	17	198	3,419
U. S. Naval Convalescent Hospital	Conv	Navy	776	674	..	...	3,716
San Diego, 203,341—San Diego							
Family Hospital	Gen	Navy	79	57	48	1,071	2,4[illegible]
Mercy Hospital▲○	Gen	Church	325	282	98	3,055	11,870
Salvation Army Door of Hope Home	Mat	Church	20	18	12	67	100
San Diego County General Hospital★+▲○	Gen	County	720	510	7	297	6,701
U. S. Naval Air Station Disp	Gen	Navy	462	142	..	...	8,879
U. S. Naval Air Station Dispensary (Camp Kearney)	Gen	Navy	56	22	..	...	2,180
U. S. Naval Hospital★+▲	Gen	Navy	8,500	8,575	75	2,475	59,275
Vauclain Home	Unit of San Diego County General Hosp.						
San Fernando, 9,094—Los Angeles							
San Fernando Hospital	Gen	Indiv	25	14	8	231	857
Veterans Admin. Hospital▲	TB	Vet	394	374	..	...	511
San Francisco, 634,536—San Francisco							
Children's Hospital★+▲○	Gen	NPAssn	225	192	60	2,103	6,742
Chinese Hospital	Gen	NPAssn	50	46	9	197	1,214
Franklin Hospital★+▲○	Gen	NPAssn	240	206	20	419	6,347
French Hospital★+▲○	Gen	NPAssn	200	171	19	422	4,863

Key to symbols and abbreviations is on page 1091

CALIFORNIA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Greens' Eye Hospital+▲	ENT	Part	35	18	..	...	1,326
Hahnemann Hospital▲	Gen	NPAssn	79	65	..	...	2,508
Laguna Honda Home	InstGen	CyCo	900	773	..	...	803
Langley Porter Clinic+	Ment	State	63	44	..	...	652
Letterman General Hosp.★+▲	Gen	Army	1,192	780	10	143	9,064
Mary's Help Hospital★+▲◇	Gen	Church	172	161	61	1,868	6,362
Mount Zion Hospital★+▲◇	Gen	NPAssn	163	134	30	624	5,116
Park Sanitarium	N&M	Corp	33	26	..	...	1,260
St. Elizabeth's Infant Hosp.	MatCh	Church	85	96	10	176	377
St. Francis Hospital▲◇	Gen	NPAssn	285	238	54	1,127	9,761
St. Joseph's Hospital★▲◇	Gen	Church	235	195	45	1,765	7,412
St. Luke's Hospital★+▲◇	Gen	Church	200	177	25	[illegible]	6,448
St. Mary's Hospital★+▲◇	Gen	Church	335	344	50	1,849	10,391
San Francisco Hospital★+▲⊙	Gen	CyCo	1,346	964	50	683	16,235
San Francisco Polyclinic	Gen	NPAssn	20	14	..	...	960
San Francisco Psychopathic Hospital	Unit of San Francisco Hospital						
Shriners Hospital for Crippled Children+▲⊙	Orth	NPAssn	40	40	..	...	159
Southern Pacific General Hospital★▲	Indus	NPAssn	400	407	..	...	7,260
Stanford University Hospitals★+▲◇	Gen	NPAssn	361	292	46	1,978	10,159
U. S. Marine Hospital★▲	Gen	USPHS	617	494	..	...	9,291
U. S. Naval Hospital★▲	Gen	Navy	1,389	789	..	...	19,206
University of California Hospital★+▲◇	Gen	State	279	226	30	883	7,553
Veterans Admin. Center▲	Gen	Vet	341	285	..	...	2,501
Sanger, 4,017—Fresno							
Sanger Sanitarium	Gen	Indiv	16	12	5	251	1,003
Sanitarium, 500—Napa							
St. Helena Sanitarium and Hospital+◇	Gen	Church	135	123	8	179	3,557
San Jacinto, 1,356—Riverside							
Soboba Indian Hospital	Gen	IA	34	16	3	40	292
San Jose, 68,457—Santa Clara							
Alum Rock Sanatorium	TB	NPAssn	65	61	..	...	280
O'Connor Sanitarium▲◇	Gen	Church	122	112	36	1,198	5,174
San Jose Hospital▲◇	Gen	NPAssn	145	124	45	1,618	5,698
Santa Clara County Hospital★+▲◇	GenTb	County	423	337	32	307	5,349
Santa Clara County Sanat.+	Unit of Santa Clara County Hospital						
Sunnyholme Preventorium	Unit of Santa Clara County Hospital						
San Leandro, 14,601—Alameda							
Fairmont Hospital of Alameda County	See Oakland						
U. S. Naval Hospital▲	Gen	Navy	1,621	1,400	..	...	11,000
San Luis Obispo, 8,881—San Luis Obispo							
Mountain View Hospital	Gen	Indiv	30	27	8	339	1,272
San Luis Obispo County Tuberculosis Sanatorium	Unit of San Luis Obispo General Hospital						
San Luis Obispo Gen. Hosp.	GenTb	County	80	38	12	156	1,536
San Luis Sanitarium	Gen	Indiv	30	25	5	116	1,501
San Mateo, 19,403—San Mateo							
Community Hospital of San Mateo County▲	Gen	County	200	95	14	96	2,018
Mills Memorial Hospital▲	Gen	Church	159	126	31	1,355	6,016
San Pedro, —Los Angeles							
San Pedro Hospital▲	Gen	Corp	132	92	32	891	4,954
Station Hospital▲	Gen	Army	86	35	..	...	1,283
San Quentin, 328—Marin							
Charles L. Neumiller Hosp.	Inst	State	200	195	..	...	1,800
San Rafael, 8,573—Marin							
Marin County Hospital and Farm	Chr	County	45	37	..	...	58
San Rafael Cottage Hospital.	Gen	Indiv	40	35	16	447	3,125
Santa Barbara, 34,958—Santa Barbara							
St. Francis Hospital★	Gen	Church	85	63	15	453	3,039
Santa Barbara Cottage Hospital★+▲◇	Gen	NPAssn	185	153	25	594	5,273
Santa Barbara Gen. Hosp.★▲	Gen	County	238	184	12	9	1,119
U. S. Marine Corps Air Station Dispensary	Gen	Navy	75	44	..	...	2,079
Santa Cruz, 16,896—Santa Cruz							
Santa Cruz County Hospital.	Gen	County	163	117	7	31	1,209
Santa Cruz Hospital	Gen	Corp	37	30	13	319	2,541
Sisters Hospital	Gen	Church	28	23	7	147	,658
U. S. Naval Convalescent Hospital	Conv	Navy	896	763	..	...	5,684
Santa Maria, 8,522—Santa Barbara							
Our Lady of Perpetual Help Hospital▲	Gen	Church	50	43	11	580	2,425
Santa Monica, 53,500—Los Angeles							
St. John's Hospital	Gen	Church	100	87	40	1,760	4,376
Santa Monica Hospital★▲	Gen	Church	178	157	42	1,247	5,617
Santa Rosa, 12,605—Sonoma							
Eliza Tanner Hospital	Gen	Part	20	15	5	70	1,357
Sonoma County Hospital+▲◇	GenTb	County	426	331	14	421	3,161
Scotia, 2,200—Humboldt							
Scotia Hospital	Gen	NPAssn	35	22	8	174	1,109
Selma, 3,667—Fresno							
Selma Sanitarium	Gen	Corp	31	25	5	275	1,314
Shoemaker (Oakland P. O.), —Alameda							
U. S. Naval Hospital★▲	Gen	Navy	3,183	2,729	15	231	26,152
Sonoma, 1,158—Sonoma							
Sonoma Valley Community Hospital	Gen	NPAssn	22	...	4	Estab. 1945	
Sonora, 2,257—Tuolumne							
Sonora Hospital	Gen	Indiv	23	14	4	62	693
Tuolumne County Hosp.	InstGen	County	41	32	3	11	440
South Gate, 26,945—Los Angeles							
Suburban Hospital	Gen	Corp	52	45	30	926	2,214

CALIFORNIA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
South Pasadena, 14,356—Los Angeles							
Pasadena Sanitarium	N&M	Indiv	75	47	..	...	222
South San Francisco, 6,629—San Mateo							
South San Francisco Hospital	Gen	Corp	36	No data supplied			
Spadra, 275—Los Angeles							
Pacific Colony	MeDe	State	1,865	1,568	..	...	241
Springville, 665—Tulare							
Tulare-Kings Counties Joint Tuberculosis Hospital	TB	Counties	140	115	..	...	85
Stockton, 54,714—San Joaquin							
Dameron Hospital	Gen	NPAssn	82	61	18	852	2,902
St. Joseph's Hospital▲	Gen	Church	95	99	22	1,021	4,693
Stockton State Hospital	Ment	State	4,442	4,329	..	...	1,506
Susanville, 1,575—Lassen							
Riverside Hospital	Gen	Part	20	20	6	100	710
Talmage, 350—Mendocino							
Mendocino State Hospital+	Ment	State	3,001	2,905	..	...	741
Tehachapi, 1,264—Kern							
Tehachapi Valley Hospital	Gen	Indiv	15	9	3	60	456
Torrance, 9,950—Los Angeles							
Jared Sidney Torrance Memorial Hospital▲	Gen	NPAssn	40	40	18	675	2,207
Trona, 775—San Bernardino							
Trona Hospital	Gen	NPAssn	25	10	7	79	736
Tulare, 8,259—Tulare							
East Tulare Hospital	Gen	Indiv	12	8	12	508	512
Tulare County General Hosp.	Gen	County	103	44	15	92	1,101
Tulare Hospital	Gen	Indiv	24	18	4	7	863
Turlock, 4,839—Stanislaus							
Emanuel Hospital	Gen	Church	41	43	11	342	2,066
Lillian Collins Hospital	Gen	Indiv	30	21	10	172	1,028
Upland, 6,316—San Bernardino							
San Antonio Community Hospital▲	Gen	NPAssn	74	59	22	696	2,422
Vallejo, 20,072—Solano							
Vallejo Community Hospital.	Gen	City	265	121	28	902	4,967
Vallejo General Hospital	Gen	Part	70	55	20	1,035	2,800
Van Nuys, —Los Angeles							
Valley Hospital	Gen	Corp	42	35	5	455	1,813
Ventura, 13,264—Ventura							
Bard Memorial Hospital	Unit of Ventura County Hospital						
Foster Memorial Hospital▲	Gen	NPAssn	65	51	12	377	2,182
Ventura County Hospital▲	GenTb	County	314	214	14	163	4,190
Veterans Home, 1,866—Napa							
Veterans Home Hospital▲	Inst	State	253	221	..	...	1,326
Visalia, 8,904—Tulare							
ital	Gen	City	50	36	15	491	1,932
Cruz							
	Gen	Corp	39	31	10	495	1,782
Weimar, 125—Placer							
Weimar Joint Sanatorium	TB	Counties	550	470	..	...	511
West Los Angeles, —Los Angeles							
Veterans Admin. Center+▲	Gen	Vet	1,412	1,014	..	...	8,251
Westwood, 5,000—Lassen							
	Gen	NPAssn	47	10	9	78	662
Frank R. Howard Memorial Hospital	Gen	NPAssn	25	20	6	92	827
Woodlake, 1,146—Tulare							
Sequoia Hospital	Gen	Indiv	9	6	4	132	473
Woodland, 6,637—Yolo							
Woodland Clinic Hospital▲	Gen	Part	65	42	10	353	2,031
Yosemite National Park, 500—Mariposa							
Lewis Memorial Hospital	Gen	Indiv	13	...	2	...	...
Yreka, 2,465—Siskiyou							
Siskiyou County Gen. Hosp.	Gen	County	165	136	14	167	1,539
Yuba City, 4,968—Sutter							
Sutter County Hospital	Gen	County	38	26	9	38	703
Yuba City General Hospital	Gen	Indiv	25	23	10	401	1,169

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Altadena, —Los Angeles							
Pasadena Health School	Conv	NPAssn	40	23	..	...	55
Artesia, 3,891—Los Angeles							
Pioneer Sanitarium	N&M	Indiv	53	48	..	...	21
Belmont, 1,229—San Mateo							
Chas. S. Howard Foundation	TB	Corp	20	12	..	...	86
Chino, 4,204—San Bernardino							
Hospital of the California Institution for Men▲	Inst	State	25	7	..	...	200
Claremont, 3,057—Los Angeles							
Claremont Colleges Infirmary	Inst	NPAssn	16	2	..	...	279
Duarte, 2,000—Los Angeles							
Santa Teresita Sanatorium	TB	Church	125	118	..	...	99
Eureka 17,055—Humboldt							
Humboldt County Isolation Hospital	Iso	County	16	3	2	...	103
La Crescenta, 3,000—Los Angeles							
Kimball Sanitarium	N&M	Part	35	26	..	...	176
Lancaster, 2,400—Los Angeles							
Antelope Valley Sanatorium and Hospital	TB	Part	118	..No data supplied			
Larkspur, 1,558—Marin							
Larkspur Convalescent and Rest Home	Conv	Indiv	12	10	..	...	37
Lincoln, 2,044—Placer							
Joslin's Sanatorium	N&M	Indiv	15	8	..	...	13
Long Beach, 164,271—Los Angeles							
California Sanitarium	Conv	Indiv	57	57	..	...	759

Key to symbols and abbreviations is on page 1091

CALIFORNIA—Continued

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Los Angeles, 1,504,277—Los Angeles							
Booth Memorial Hospital....	Mat	Church	15	14	40	230	332
Chase Diet Sanitarium........	Conv	Indiv	23	22	..	...	93
Florence Crittenton Home....	Mat	NPAssn	44	29	6	81	98
Mont St. John of God Sanit.	Conv	Church	40	35	..	...	20
Resthaven	N&M	NPAssn	45	34	..	...	207
St. Anne's Maternity Hosp.▲.	Mat	Church	10	8	15	239	278
St. Barnabas Rest Home for Men	Conv	Church	14	7	..	...	232
Twentieth Century Sanitarium	N&M	Indiv	45	45	..	...	60
Monrovia, 12,807—Los Angeles							
Maryknoll Sanatorium	TB	Church	42	41	..	...	42
National City, 10,344—San Diego							
Hillcrest Manor Sanitarium...	N&M	Indiv	50	47	..	...	56
Oakland, 302,163—Alameda							
Booth Memorial Hospital....	Mat	Church	65	59	38	234	320
Pacoima, —Los Angeles							
Independent Order of Foresters California Tuberculosis Sanit.	TB	NPAssn	50	18	..	...	20
Rosemead, 5,500—Los Angeles							
Rosemead Lodge	N&M	Indiv	50	25	..	...	136
Ross, 1,751—Marin							
Cedars Development School..	McDe	Corp	54	53	..	...	10
San Diego, 203,341—San Diego							
Fraser Hall Hospital.........	Conv	Indiv	25	22	..	...	141
San Francisco, 634,536—San Francisco							
Garden Nursing Home........	Incur	NPAssn	80	80	..	...	46
San Gabriel, 11,867—Los Angeles							
Mission Lodge Sanitarium....	N&M	Indiv	68	68	..	...	19
San Marino Sanitarium.......	N&M	Part	54	54	..	...	51
San Jose, 68,457—Santa Clara							
Beale Sanitarium	Conv	Indiv	14	13	..	...	44
San Mateo, 19,403—San Mateo							
San Mateo Preventorium.....	TB	NPAssn	28	22	..	...	20
Santa Barbara, 34,958—Santa Barbara							
La Loma Feliz................	Chil	NPAssn	42	41	..	...	88
Santa Monica, 53,500—Los Angeles							
Loamshire Convalescent Hospital and Rest Home......	Unit of Santa Monica Hospital						
Sonora, 2,257—Tuolumne							
Columbia Way Hospital......	Gen	Indiv	45	...	8	Estab. 1945	
Stanford University, 720—Santa Clara							
Stanford Convalescent Home.	Chil	NPAssn	80	65	..	...	117
Sunland, —Los Angeles							
Sunland Sanatorium	TB	Corp	60	35	..	...	151
Tujunga, —Los Angeles							
Reslock Health Home........	Chil	Indiv	38	32	..	...	80
Verdugo City, 1,500—Los Angeles							
Rockhaven Sanitarium	N&M	Indiv	110	104	..	...	146

COLORADO

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Alamosa, 5,613—Alamosa							
Alamosa Community Hosp...	Gen	Church	47	45	10	407	2,579
Aspen, 777—Pitkin							
Citizens' Hospital	Gen	NPAssn	15	4	2	6	181
Boulder, 12,958—Boulder							
Boulder-Colorado Sanitarium and Hospital+▲○	Gen	Church	101	73	10	118	1,852
Boulder County Hospital....	Gen	County	48	25	6	13	336
Community Hospital▲	Gen	NPAssn	45	37	12	229	1,600
Brush, 2,481—Morgan							
Eben-Ezer Hospital	Gen	Church	24	16	8	137	665
Burlington, 1,280—Kit Carson							
Hayes General Hospital......	Gen	Indiv	17	9	6	44	364
Canon City, 6,690—Fremont							
Colorado Hospital	Gen	Indiv	35	34	8	62	1,428
Colorado State Penitentiary Hospital	Inst	State	40	30	..	...	1,023
St. Thomas More Hospital...	Gen	Church	42	27	7	98	1,225
Cheyenne Wells, 695—Cheyenne							
Cheyenne County Hospital...	Gen	Indiv	34	5	7	48	236
Climax, 500—Lake							
Climax Molybdenum Company Hospital	Indus	NPAssn	10	1	..	1	120
Collbran, 301—Mesa							
Plateau Valley Congregation Hospital	Gen	Church	13	5	4	28	325
Colorado Springs, 36,789—El Paso							
Colorado Springs Psychopathic Hospital	N&M	Part	150	135	..	...	194
El Paso Contagious and Observation Hospital	Unit of Memorial Hospital						
Glockner Sanat. and Hosp.▲○	GenTb	Church	175	135	30	685	3,147
Memorial Hospital+▲○	Gen	City	113	74	17	474	2,962
St. Francis Hospital and Sanatorium+▲⊙	GenTb	Church	190	147	25	359	2,494
Union Printers Home and Tuberculosis Sanatorium ...	GenTb	NPAssn	455	245	..	...	152
Cripple Creek, 2,358—Teller							
Cripple Creek Hospital.......	Gen	NPAssn	25	5	6	16	181
Del Norte, 1,923—Rio Grande							
St. Joseph's Hospital........	Gen	Church	43	29	11	101	1,169
St. Mary's Pavilion..........	Unit of St. Joseph's Hospital						
Delta, 3,717—Delta							
Western Slope Memorial Hosp.	Gen	NPAssn	11	6	3	46	230

COLORADO—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Denver, 322,412—Denver							
Bethesda Sanatorium	TB	Church	48	37	..	...	32
Beth Israel Hospital▲.........	Gen	NPAssn	55	47	10	128	1,866
Childrens Hospital+▲○	Chil	NPAssn	200	175	15	...	7,777
Colorado General Hosp.★+▲○.	Gen	State	245	160	20	476	3,526
Colorado Psychopathic Hospital+▲⊙	Ment	State	78	84	..	...	799
Denver General Hosp.★+▲○...	GenTb	CyCo	614	302	36	370	9,502
Ex-Patients' Tubercular Home	TB	NPAssn	50	34	..	...	11
Fitzsimons General Hosp.+▲..	GenTb	Army	1,185	888	6	77	7,344
Mercy Hospital★▲○	Gen	Church	250	231	30	1,056	12,428
Mount Airy Sanitarium▲......	N&M	Part	68	48	..	...	654
National Jewish Hospital+▲..	TB	NPAssn	220	211	..	...	116
Porter Sanitarium and Hospital★▲○	Gen	Church	130	122	23	702	3,868
Presbyterian Hospital★+▲○ ..	Gen	Church	160	159	80	1,197	5,916
Robert W. Speer Memorial Hospital for Children......	Unit of Denver General Hospital						
St. Anthony Hospital★▲○.....	Gen	Church	190	163	40	1,138	6,592
St. Joseph's Hospital★▲○.....	Gen	Church	275	264	54	1,695	8,622
St. Luke's Hospital★+▲○......	Gen	Church	271	220	45	1,449	8,175
Steele Memorial Hospital......	Iso	CyCo	80	20	..	...	572
Durango, 5,887—La Plata							
La Plata County Hospital...	Gen	County	30	10	8	16	194
Mercy Hospital▲○	Gen	Church	56	47	9	269	3,189
Edgewater, 1,648—Jefferson							
Craig Colony	TB	NPAssn	50	36	..	...	35
Sands House	TB	NPAssn	39	28	..	...	22
Englewood, 9,680—Arapahoe							
Federal Correctional Institution	Inst	USPHS	25	13	..	...	498
Swedish National Sanatorium	TB	NPAssn	72	60	..	...	96
Flagler, 506—Kit Carson							
Flagler Hospital	Gen	Indiv	12	6	4	57	336
Fort Collins, 12,251—Larimer							
Larimer County Hospital▲...	Gen	County	54	49	10	416	2,198
Fort Logan, —Arapahoe							
Convalescent Hospital▲	Conv	Army	74	39	..	...	677
Fort Lyon, 1,180—Bent							
Veterans Admin. Hospital▲...	Ment	Vet	1,026	1,013	..	...	362
Fort Morgan, 4,884—Morgan							
Fort Morgan Hospital........	Gen	Indiv	25	14	8	136	625
Fruita, 1,466—Mesa							
Fruita Community Hospital..	Gen	Indiv	14	6	5	81	399
Glenwood Springs, 2,253—Garfield							
Dr. Porter's Hospital.........	Gen	Part	18	11	6	403	491
U. S. Naval Convalescent Hospital	Conv	Navy	660	558	..	...	2,915
Grand Junction, 12,479—Mesa							
St. Mary's Hospital▲○........	Gen	Church	65	46	15	440	2,140
Greeley, 15,995—Weld							
Weld County Public Hospital	Gen	County	108	87	18	717	3,077
Gunnison, 2,177—Gunnison							
Community Hospital	Gen	Indiv	25	9	5	55	380
Hayden, 640—Routt							
Solandt Memorial Hospital...	Gen	NPAssn	15	11	4	95	423
Holyoke, 1,150—Phillips							
Holyoke Hospital	Gen	Indiv	11	7	5	51	366
Ignacio, 555—La Plata							
Edward T. Taylor Indian Hospital	Gen	IA	21	9	4	21	181
Julesburg, 1,619—Sedgwick							
Community Hospital	Gen	NPAssn	11	8	6	83	301
La Junta, 7,040—Otero							
Atchison, Topeka and Santa Fe Railroad Hospital▲......	Indus	NPAssn	36	19	..	...	603
Mennonite Hospital and Sanitarium▲○	Gen	Church	58	56	17	506	2,156
Lamar, 4,445—Prowers							
Prowers County General Hospital	Gen	County	40	18	15	293	1,096
Leadville, 4,774—Lake							
St. Vincent Hospital.........	Gen	Church	36	12	10	80	480
Longmont, 7,406—Boulder							
Longmont Hospital▲	Gen	Indiv	35	21	10	141	1,163
St. Vrain Hospital...........	Gen	Indiv	25	12	5	54	447
Loveland, 6,145—Larimer							
Loveland Hospital and Clinic	Gen	Corp	11	7	5	89	518
Monte Vista, 3,208—Rio Grande							
Monte Vista Community Hospital	Gen	Church	23	16	10	127	938
Montrose, 4,764—Montrose							
St. Luke's Hospital..........	Gen	Indiv	20	12	9	123	492
Oak Creek, 1,769—Routt							
Oak Creek Hospital..........	Gen	Indiv	16	8	3	48	365
Ouray, 951—Ouray							
Bates Hospital and Sanit....	Gen	Corp	16	3	2	9	266
Pueblo, 52,162—Pueblo							
Colorado State Hospital+▲⊙.	Ment	State	4,481	4,256	..	...	763
Corwin Hospital★+▲○	Gen	NPAssn	206	142	21	480	4,733
Parkview Hospital▲○	Gen	NPAssn	100	80	20	489	2,870
St. Mary Hospital+▲○........	Gen	Church	184	110	28	577	3,237
Woodcroft Hospital▲	N&M	Corp	130	66	..	...	153
Rocky Ford, 3,494—Otero							
Physicians Hospital	Gen	NPAssn	13	12	5	130	627
Salida, 4,969—Chaffee							
Denver and Rio Grande Western Railroad Hosp.▲..	Gen	NPAssn	85	61	7	143	2,120

Key to symbols and abbreviations is on page 1091

COLORADO—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Spivak, 350—Jefferson							
Sanatorium of the Jewish Consumptives' Relief Society+▲	TB	NPAssn	300	232	..	...	143
Sterling, 7,411—Logan							
Good Samaritan Hospital	Gen	Church	30	25	12	150	1,149
St. Benedict Hospital▲	Gen	Church	34	25	9	210	1,163
Trinidad, 13,223—Las Animas							
Mount San Rafael Hosp.▲◇	Gen	Church	65	36	10	264	1,293
Walsenburg, 5,855—Huerfano							
Lamme Hospital	Gen	Indiv	20	10	3	70	537
Wheat Ridge, 3,500—Jefferson							
Evangelical Lutheran Sanat.▲	TB	Church	110	85	..	...	65
Woodmen, 250—El Paso							
Modern Woodmen of America Sanatorium▲	TB	NPAssn	65	53	..	...	83
Wray, 2,061—Yuma							
Wray Hospital	Gen	Indiv	15	5	6	77	334

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Boulder, 12,958—Boulder							
Mesa Vista Sanatorium	TB	Part	55	37	..	...	40
Colorado Springs, 36,789—El Paso							
Cragmor Sanatorium	TB	NPAssn	130	40	..	...	88
Denver, 322,412—Denver							
Booth Memorial Hospital	Mat	Church	8	5	18	87	96
Florence Crittendon Home and Hospital	Mat	NPAssn	66	45	9	130	149
St. Francis Sanatorium	TB	Church	22	20	..	...	50
Englewood, 9,680—Arapahoe							
Costello Home	TB	NPAssn	14	3	..	...	3
Temple Sanatorium	N&M	Indiv	35	32	..	...	175
Golden, 3,175—Jefferson							
Hospital State Industrial School for Boys	Inst	State	25	3	..	...	267
Grand Junction, 12,479—Mesa							
State Home and Training School for Mental Defectives	MeDe	State	505	445	..	...	31
Homelake, 225—Rio Grande							
Colorado State Soldiers and Sailors Home	Inst	State	35	10	..	...	37
Ridge, 100—Jefferson							
State Home and Training School for Mental Defectives	MeDe	State	350	335	..	...	23

CONNECTICUT

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
[illegible] 147,121—Fairfield							
[illegible]▲	Gen	NPAssn	342	310	74	2,004	10,727
[illegible]	IsoTb	City	150	16	..	...	288
[illegible]	Gen	NPAssn	35	25	10	60	937
[illegible]▲	Gen	Church	347	242	80	2,152	9,882
Bristol 30,167—Hartford							
Bristol Hospital+▲	Gen	NPAssn	150	101	30	748	4,414
Canaan, 555—Litchfield							
Robert C. Geer Memorial Hospital	Gen	NPAssn	30	20	7	102	1,265
Cromwell, 3,281—Middlesex							
Cromwell Hall	Nerv	Corp	33	16	..	...	98
[illegible]▲	Gen	NPAssn	180	150	40	740	4,620
[illegible] nstitu- [illegible]	Inst	USPHS	33	28	..	...	653
[illegible]▲	Gen	NPAssn	94	76	26	732	3,130
[illegible]	N&M	Corp	65	49	..	...	203
Greenwich, 6,00[illegible]							
Blythewood	N&M	Corp	79	66	..	...	216
Greenwich Hospital+▲◇	Gen	NPAssn	128	85	23	428	2,915
St Luke's Convalescent Hospital	Conv	Church	110	78	..	...	871
Hartford, 166,267—Hartford							
Avery Convalescent Hospital	Unit of Hartford Hospital						
Cedarcrest Sanatorium▲	TB	State	292	247	..	..	184
Hartford Hospital★+▲◇	Gen	NPAssn	730	607	162	4,663	21,949
Institute of Living (Neuro-Psychiatric Institute of the Hartford Retreat)+▲	N&M	NPAssn	350	375	..	...	965
[illegible]▲	Gen	NPAssn	57	45	..	...	1,639
[illegible]▲	GenIso	City	291	172	6	50	3,417
[illegible]▲	Gen	Church	527	450	79	1,911	15,574
Kent, 1,24[illegible]—Litchfield							
Kent School Infirmary	Inst	NPAssn	27	4	..	...	182
Lakeville, 1,800—Litchfield							
Hotchkiss School Infirmary	Inst	NPAssn	36	15	..	...	170
[illegible] p▲	Gen	NPAssn	100	84	20	451	3,453
Meriden, [illegible]							
Meriden Hospital★▲◇	Gen	NPAssn	141	110	35	969	4,184
Undercliff, Meriden State Tuberculosis Sanatorium+▲	TB	State	343	261	..	...	273
[illegible]▲○	Ment	State	3,144	2,921		..	762
[illegible]▲	Gen	NPAssn	146	111	27	834	4,193
Milford, 16,439—New Haven							
Milford Hospital	Gen	NPAssn	50	29	15	235	1,203
New Britain, 68,685—Hartford							
New Britain General Hospital★+▲◇	Gen	NPAssn	220	191	38	1,678	6,915

CONNECTICUT—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
New Haven, 160,605—New Haven							
Dr. J. H. Evans' Private Hosp	Gen	Indiv	7	5	..	...	239
Grace New Haven Community Hospital							
Grace Unit★+▲◇	Gen	NPAssn	230	155	40	1,379	5,940
New Haven Unit★+▲◇	Gen	NPAssn	539	405	53	1,401	10,614
Hospital of St. Raphael★+▲◇	Gen	Church	340	276	60	1,516	8,988
Psychiatric Clinic, Yale School of Medicine	Unit of Grace-New Haven Com. Hospital						
Sarah Wey Thompkins Memorial Pavilion	Unit of Grace New Haven Com. Hospital						
Newington, 5,449—Hartford							
Newington Home for Crippled Children+▲	Orth	NPAssn	180	131	..	...	142
Veterans Admin Hospital▲	Gen	Vet	472	313	..	...	3,252
New London, 30,456—New London							
Lawrence and Memorial Associated Hospitals★▲◇	Gen	NPAssn	268	168	81	1,018	5,556
Dr. Lena's Surgical Hospital	Surg	Indiv	26	20	..	...	990
U. S Coast Guard Academy Hospital▲	Gen	USPHS	34	29	..	...	1,195
New Milford, 3,000—Litchfield							
New Milford Hospital	Gen	NPAssn	26	12	6	116	392
Newtown, 603—Fairfield							
Fairfield State Hospital▲○	Ment	State	2,389	2,322	..	..	751
Norwalk, 38,849—Fairfield							
Norwalk General Hospital★▲◇	Gen	NPAssn	212	160	44	997	6,655
Norwich, 23,652—New London							
Norwich State Hospital+▲○	Ment	State	2,600	2,562	..	...	725
Norwich State Tuberculosis Sanatorium (Uncas On-Thames)+▲	TB	State	422	375	..	...	339
William W. Backus Hosp.★▲◇	Gen	NPAssn	108	92	29	911	3,696
Portland, 2,500—Middlesex							
Elmcrest Manor	N&M	Indiv	32	29	..	...	220
Putnam, 7,775—Windham							
Day Kimball Hospital▲	Gen	NPAssn	74	73	18	463	2,255
Rockville, 7,572—Tolland							
Rockville City Hospital	Gen	NPAssn	35	24	6	166	801
Sharon, 500—Litchfield							
Sharon Hospital▲	Gen	NPAssn	40	18	7	141	921
Shelton, 10,971—Fairfield							
Laurel Heights State Tuberculosis Sanatorium+▲	TB	State	331	322	..	...	307
Southbury, 1,100—New Haven							
Southbury Training School	MeDe	State	1,500	1,140	..	...	161
Southington, 5,088—Hartford							
Bradley Memorial Hospital	Gen	NPAssn	14	11	..	...	607
Stafford Springs, 3,101—Tolland							
[illegible] Johnson [illegible]▲	Gen	NPAssn	50	30	12	228	1,160
Stamford, 47,938—Fairfield							
Dr. Barnes Sanitarium	N&M	Corp	50	35	..	...	136
St. Joseph Hospital▲	Gen	Church	90	69	29	831	4,890
Stamford Hall	N&M	Corp	150	138	..	...	283
Stamford Hospital★▲◇	Gen	NPAssn	270	150	54	662	6,807
Tophassee Grange	N&M	Corp	26	8	..	...	2
[illegible]—Litchfield							
[illegible] Hosp▲	Gen	NPAssn	133	84	27	627	3,452
[illegible] Haven							
Gaylord Farm Sanatorium+	TB	NPAssn	145	135	..	...	193
Waterbury, 99,314—New Haven							
St. Mary's Hospital★▲◇	Gen	Church	327	253	67	1,215	7,820
Waterbury Hospital★▲◇	Gen	NPAssn	306	225	62	1,531	8,973
[illegible] London							
[illegible]	TbChil	State	145	127	..	...	38
[illegible]	N&M	Corp	100	67	..	...	138
[illegible]	Gen	NPAssn	96	68	22	389	2,467
[illegible]▲	Gen	NPAssn	69	53	16	206	1,786

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Bridgeport, 147,121—Fairfield							
Hillside Home and Hospital	Chr	City	275	253	..	...	342
East Lyme, 3,338—New London							
Ida Thompson Hospital	Unit of Connecticut State Farm for Women, Niantic						
Greenwich, 6,000—Fairfield							
Municipal Hospital	ChrIso	City	72	38	2	...	167
Mansfield Depot, [illegible]00—Tolland							
Mansfield State Training School and Hospital	MeDe	State	1,200	1,148	..	..	116
Meriden, 39,494—New Haven							
Connecticut School for Boys	Inst	State	37	7	..	...	257
New Britain, 68,685—Hartford							
New Britain Memorial Hosp.	Gen	Church	50	.. No data supplied			
New Canaan, 6,221—Fairfield							
Silver Hill Foundation	Nerv	NPAssn	46	27	..	...	2[illegible]6
New Haven, 160,605—New Haven							
Jewish Home for the Aged	Inst	NPAssn	96	91	..	...	2[illegible]
Yale Infirmary	Inst	NPAssn	35	8	..	...	917
Niantic 1,312—New London							
Connecticut State Farm for Women	Inst	State	117	53	9	61	1[illegible]
[illegible]	Inst	State	2[illegible]4	100	..	..	1,470
[illegible]	MeDe	NPAssn	125	100	..	...	83

Key to symbols and abbreviations is on page 1091

CONNECTICUT—Continued

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
West Hartford, 33,776—Hartford							
St. Agnes Home	Mat	Church	9	2	6	77	96
West Haven, 30,021—New Haven							
West Haven Convalescent Home	Conv	Indiv	5	5	..	...	12
West Suffield, 700—Hartford							
Travelers Rest House	Conv	NPAssn	30	11	..	...	70
Wethersfield, 9,644—Hartford							
Connecticut State Prison Hospital	Inst	State	29	13	..	...	193

DELAWARE

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Dover, 5,517—Kent							
Kent General Hospital▲	Gen	NPAssn	60	53	10	402	2,084
Farnhurst, 500—New Castle							
Delaware State Hospital+▲○	Ment	State	1,250	1,211	..	...	314
Fort Dupont (Delaware City P. O.)—New Castle							
Station Hospital	Gen	Army	46	8	..	...	367
Lewes, 2,246—Sussex							
Beebe Hospital▲○	Gen	NPAssn	104	56	16	237	1,783
Marshallton, 1,500—New Castle							
Brandywine Sanatorium	TB	State	124	103	..	...	100
Edgewood Sanatorium	TB	State	68	50	..	...	49
Milford, 4,214—Sussex							
Milford Memorial Hospital▲○	Gen	NPAssn	100	54	19	344	1,936
Smyrna, 1,870—Kent							
Delaware State Welfare Home Hospital	InstGen	State	378	368	7	...	176
Wilmington, 112,504—New Castle							
Alfred I. duPont Institute of *The Nemours Foundation*+▲	[illegible]	[illegible]	[illegible]	38	..	...	111
Delaware [illegible]	[illegible]	[illegible]	[illegible]	268	52	1,506	8,273
Doris Mer[illegible]	[illegible] General Hospital						
Gross Private Hospital	Gen	Corp	15	8	6	65	301
Memorial Hospital★+▲○	Gen	NPAssn	220	139	38	898	4,876
St. Francis Hospital★▲○	Gen	Church	105	65	32	395	2,301
Wilmington General Hospital★▲○	Gen	NPAssn	172	120	52	1,214	4,366

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Marshallton, 1,500—New Castle							
Sunnybrook Cottage	TbChil	NPAssn	24	19	..	...	8
Stockley, 68—Sussex							
Delaware Colony	MeDe	State	500	407	..	...	52

DISTRICT OF COLUMBIA

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Washington, 796,000							
Adams' Hospital	Gen	Indiv	23	13	6	42	369
Central Dispensary and Emergency Hospital★+▲○	Gen	NPAssn	325	238	..	...	7,114
Children's Hospital+▲⊙	Chil	NPAssn	250	190	..	...	6,640
Columbia Hospital for Women and Lying-In Asylum+▲	GynMat	NPAssn	125	101	96	3,392	4,818
District of Columbia Reformatory and Workhouse Hospital (Lorton, Va., P. O.)	Inst	City	120	..No data supplied			
Doctors Hospital★▲	Gen	Corp	242	209	63	1,342	8,505
Eastern Dispensary and Casualty Hospital▲	Gen	NPAssn	150	74	..	...	3,043
Episcopal Eye, Ear and Throat Hospital+▲	ENT	Church	86	68	..	...	6,784
Freedmen's Hospital★+▲○	GenTb	USPHS	498	409	51	2,102	7,194
Gallinger Municipal Hospital★+▲○	GenTb	City	1,460	925	154	2,414	17,263
Garfield Memorial Hosp.★+▲○	Gen	NPAssn	363	336	104	2,988	9,629
Georgetown University Hospital★+▲○	Gen	NPAssn	241	188	60	1,761	6,831
George Washington University Hospital★+▲	Gen	NPAssn	89	72	23	744	2,807
National Homeopathic Hospital▲	Gen	NPAssn	62	43	23	387	1,448
Providence Hospital★+▲○	Gen	Church	308	240	55	2,890	10,413
St. Elizabeths Hosp.★+▲○	MentGen	USPHS	7,422	6,851	4	8	2,935
Sibley Memorial Hospital★+▲○	Gen	Church	255	208	96	2,901	10,691
Tuberculosis Sanatorium+▲ (Glenn Dale Sanatorium, Glenn Dale, Md., P. O.)	TB	City	610	490	..	...	482
U. S. Soldiers Home Hosp.▲	InstGen	Fed	325	250	..	...	1,169
Veterans Admin. Hospital+▲	Gen	Vet	327	302	..	...	4,230
Walter Reed General Hospital★+▲	Gen	Army	1,400	1,055	21	170	8,407
Washington Sanitarium and Hospital★▲○	Gen	Church	188	174	29	704	3,511

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Washington 796,000							
District Training School (Laurel, Md., P. O.)	MeDe	City	700	637	..	...	31
Florence Crittenton Home	Mat	NPAssn	56	49	36	142	139
Home for the Aged and Infirm	Inst	City	150	137	..	...	145
Kendall House Sanitarium	Conv	Indiv	22	15	..	...	...
National Training School for Boys Hospital	Inst	Fed	30	10	..	...	1,172
Washington Home for Incurables	Incur	NPAssn	180	165	..	...	39

FLORIDA

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Bartow, 6,158—Polk							
Bartow General Hospital	Gen	City	30	21	12	218	919
Polk County Hospital	Gen	County	56	47	4	13	784
Bay Pines,—Pinellas							
Veterans Admin. Center▲	Gen	Vet	600	494	..	...	4,360
Belle Glade, 3,806—Palm Beach							
Migratory Labor Hospital	Gen	Fed	65	39	16	136	1,480
Bradenton, 7,444—Manatee							
Bradenton General Hospital	Gen	Part	25	15	8	116	701
Century, 2,000—Escambia							
Turberville Hospital▲	Gen	NPAssn	35	15	4	99	624
Chattahoochee, 7,110—Gadsden							
Florida State Hospital▲○	Ment	State	5,583	5,204	..	...	1,933
Clearwater, 10,136—Pinellas							
Morton F. Plant Hospital▲	Gen	NPAssn	75	39	15	296	1,847
Cocoa, 3,098—Brevard							
U. S. Naval Air Station Dispensary	Gen	Navy	94	43	13	138	2,439
Coral Gables, 8,294—Dade							
University Hospital	Gen	Corp	37	31	12	300	1,617
Dade City, 2,561—Pasco							
Jackson Memorial Hospital	Gen	County	20	8	10	135	469
Daytona Beach, 22,584—Volusia							
Halifax District Hospital	Gen	NPAssn	65	41	12	346	1,532
U. S Naval Air Station Dispensary	Gen	Navy	87	10	..	...	14
De Funiak Springs, 2,570—Walton							
Lakeside Clinic	Gen	Indiv	10	8	7	291	408
De Land, 7,041—Volusia							
De Land Memorial Hospital	Gen	NPAssn	23	10	11	144	663
U. S. Naval Air Station Dispensary	Gen	Navy	70	13	..	...	18
Dunedin, 1,758—Pinellas							
Mease Hospital	Gen	NPAssn	25	15	4	60	661
Eustis, 2,930—Lake							
Lake County Medical Center	Gen	NPAssn	57	30	14	197	1,423
Fort Lauderdale, 17,996—Broward							
Broward General Hospital	Gen	City	115	66	24	558	3,549
U. S. Naval Air Station Dispensary	Gen	Navy	75	20	..	...	1,200
Fort Myers, 10,604—Lee							
Jones-Walker Hospital	Unit of Lee Memorial Hospital						
Lee Memorial Hospital	Gen	NPAssn	40	36	5	322	1,544
Fort Pierce, 8,040—St. Lucie							
Fort Pierce Memorial Hosp.	Gen	NPAssn	52	28	13	265	1,213
Gainesville, 13,757—Alachua							
Alachua County Hospital▲○	Gen	County	116	68	30	563	3,000
University of Florida Infirmary▲	Inst	State	45	2	..	...	261
Hollywood, 6,239—Broward							
Hollywood Hospital	Gen	Corp	30	21	6	151	919
Homestead, 3,154—Dade							
James Archer Smith Hosp.	Gen	NPAssn	17	8	8	107	522
Jacksonville, 173,065—Duval							
Brewster Hospital○	Gen	Church	95	61	25	799	2,471
Duval County Hospital★+▲	Gen	County	225	117	15	226	2,185
Hazelhurst Sanatorium	TB	NPAssn	30	27	..	...	55
Hope Haven Hospital	Orth	NPAssn	72	45	..	...	265
Negro Tuberculosis Hospital	TB	CyCo	48	30	..	...	62
Riverside Hospital▲+○	Gen	NPAssn	50	42	10	151	1,679
St. Luke's Hospital★▲○	Gen	NPAssn	177	150	30	1,582	7,099
St. Vincent's Hospital★+▲○	Gen	Church	215	184	60	1,910	9,978
U. S. Naval Air Station Dispensary	Gen	Navy	156	54	..	...	3,763
U. S. Naval Hospital★▲	Gen	Navy	1,851	1,288	48	886	13,808
Key West, 12,927—Monroe							
Key West Municipal Hosp.	Gen	City	56	17	17	100	886
U. S Naval Hospital★▲	Gen	Navy	482	307	15	298	4,478
Kissimmee, 3,225—Osceola							
Osceola Hospital	Gen	Indiv	40	23	6	130	1,128
Lake City, 5,836—Columbia							
Lake Shore Hospital	Gen	City	38	42	12	371	2,077
U. S. Naval Air Station Dispensary	Gen	Navy	81	15	10	15	832
Veterans Admin. Hospital▲	Gen	Vet	419	263	..	...	3,707
Lakeland, 22,068—Polk							
Morrell Memorial Hospital	Gen	City	100	69	16	495	3,016
Lake Wales, 5,024—Polk							
Lake Wales Hospital▲	Gen	NPAssn	28	10	7	132	451
Leesburg, 4,687—Lake							
Theresa Holland Hospital	Gen	Indiv	40	15	6	105	886
Manatee, 3,595—Manatee							
Riverside Hospital	Gen	Indiv	20	8	3	29	402
Marianna, 5,079—Jackson							
Jackson Hospital	Gen	NPAssn	56	41	14	191	1,073
Melbourne, 2,622—Brevard							
Brevard Hospital	Gen	NPAssn	30	8	5	159	423
U. S. Naval Air Station Dispensary	Gen	Navy	74	12	..	...	695
Miami, 172,172—Dade							
Christian Hospital	Gen	NPAssn	30	18	12	300	1,024
Dade County Hospital▲	GenTb	County	174	78	16	250	1,852
James M. Jackson Memorial Hospital★+▲○	Gen	City	500	387	55	1,914	11,899
Miami Medical Center	Gen	Indiv	50	30	..	...	163
Miami Retreat	N&M	NPAssn	85	52	..	...	877
Miami Riverside Hospital	Gen	Corp	41	23	10	240	972
National Children's Cardiac Home	Card	NPAssn	35	30	..	...	32
Sun-Ray Park Health Resort	Conv	Corp	75	56	..	...	609
U. S. Naval Air Station Dispensary	Gen	Navy	217	155	..	...	97

Key to symbols and abbreviations is on page 1091

FLORIDA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
U S. Naval Air Station Dispensary (Richmond)	Gen	Navy	40	7	..	...	8
Victoria Hospital	Gen	Indiv	75	52	26	609	2,893
Miami Beach, 28,012—Dade							
St Francis Hospital▲	Gen	Church	175	99	40	817	4,149
Ocala, 8,986—Marion							
Munroe Memorial Hospital	Gen	CyCo	85	62	13	321	1,966
Ocala Rapid Treatment Center	Ven	State	300	200	..	...	5,242
Orlando, 36,736—Orange							
Florida Sanitarium and Hospital◇	Gen	Church	115	105	30	313	3,266
Florida State Tuberculosis Sanatorium▲	TB	State	400	281	..	..	281
Orange General Hospital★▲◇	Gen	NPAssn	233	171	30	906	5,155
Palatka, 7,140—Putnam							
Glendale Hospital	Gen	Indiv	25	24	6	146	893
Mary Lawson Sanatorium	Gen	Indiv	50	15	6	109	475
Panama City, 11,610—Bay							
Fraser Clinic Hospital	*Gen*	*Indiv*	*10*	*6*	*8*	*224*	*497*
Lisenby Hospital	Gen	NPAssn	31	15	10	196	978
Panama City Hospital	Gen	NPAssn	19	9	5	348	826
Pensacola, 37,449—Escambia							
Escambia County Tuberculosis Sanatorium	TB	CyCo	50	25	..	..	68
Pensacola Hospital▲◇	Gen	Church	197	140	35	813	7,529
Pensacola Maternity Hospital	Mat	NPAssn	21	10	20	515	576
U. S. Naval Air Training Bases	Gen	Navy	239	103	..	...	197
U. S Naval Hospital★▲	Gen	Navy	1,143	841	34	1,039	10,955
Quincy, 3,888—Gadsden							
Gadsden County Hospital	Gen	NPAssn	26	17	6	136	975
Rockledge, 725—*Brevard*							
Eugene Wuesthoff Memorial Hospital	Gen	NPAssn	20	4	8	59	243
St. Augustine, 12,090—St. Johns							
East Coast Hospital▲	Gen	NPAssn	55	56	5	140	1,672
Flagler Hospital▲	Gen	NPAssn	65	42	18	822	1,782
St. Petersburg, 60,812—Pinellas							
American Legion Hospital for Crippled Children	Orth	NPAssn	35	30	..	...	289
Mound Park Hospital▲◇	Gen	City	150	126	25	527	4,760
St. Anthony's Hospital▲	Gen	Church	125	73	25	395	2,609
St. Anthony's Villa	Unit of St Anthony's Hospital						
Sanford, 10,217—Seminole							
Fernald Laughton Memorial *Hospital*	Gen	NPAssn	32	19	12	349	983
U. S Naval Air Station Dispensary	Gen	Navy	79	11	..	...	14
Sarasota, 11,141—Sarasota							
Joseph Halton Hospital	Gen	Indiv	20	15	5	15	1,376
Sarasota Hospital	*Gen*	*City*	*58*	*40*	*15*	328	1,476
	Gen	Indiv	20	18	7	137	6,510
	Gen	NPAssn	30	12	8	75	431
	Inst	USPHS	22	15	..	..	385
	Gen	Indiv	36	24	7	306	1,504
T							
	Gen	NPAssn	81	*46*	*10*	*331*	*2,896*
Negro Hospital▲	Gen	City	65	35	9	...	2,047
Hillsborough County Home and Hospital	InstGen	County	230	165	12	108	1,126
St. Joseph's Hospital▲	Gen	Church	80	79	32	917	4,219
Tampa Municipal Hosp★▲◇	Gen	City	304	192	33	1,179	8,798
Umatilla, 1,149—Lake							
Harry-Anna Crippled Chil*dren's Home*	Orth	NPAssn	60	28	..	...	89
Vero Beach, 3,050—Indian River							
Indian River Hospital	Gen	NPAssn	18	10	12	106	485
U. S Naval Air Station Dispen	Gen	Navy	77	31	..	...	1,902
West P Beach							
Good ▲	Gen	NPAssn	123	76	22	434	3,772
St. N ▲	Gen	*Church*	75	49	15	412	1,712
Winter							
Wint	Gen	NPAssn	32	27	7	282	1,416

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
	Gen	NPAssn	22	28	10	241	731
	MeDe	*State*	550	500	..	...	27
	Drug	*Indiv*	*20*	*9*	..	...	*651*
Pinellas County Hospital	*InstTb*	*County*	152	64	..	...	100
Miami, 172,172—Dade							
ater Hospital	Gen	Indiv	41	38	8	111	1,479
Home	Conv	Part	12	8	..	...	65
osp	Inst	State	60	35	..	...	851
ellas							
Earle Restorium	Conv	Indiv	35	20	..	...	125
Florence Crittenton Home	Mat	NPAssn	23	15	15	49	44
Tallahassee, 16,240—Leon							
Florida Agricultural and Mechanical College Hosp◇	InstGen	State	48	35	8	66	1,069

GEORGIA

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Albany, 19,055—Dougherty							
Phoebe Putney Memorial Hospital▲	Gen	CyCo	108	51	30	465	3,132
Alto, 217—Habersham							
State Tuberculosis Sanat▲	TB	State	581	428	..	...	620
Americus, 9,281—Sumter							
Americus and Sumter County Hospital	Gen	NPAssn	40	35	10	228	1,504
Athens, *20,650*—Clarke							
Athens General Hospital▲	Gen	County	84	59	10	316	2,6[illegible]7
St. Mary's Hospital▲	Gen	Church	74	61	12	552	2,5[illegible]
Atlanta, *302,288*—Fulton							
Albert Steiner Clinic for Cancer and Allied Diseases✝▲	Cancer	City	33	26	.	..	2,895
Battle Hill Sanatorium	TB	County	258	173	.	.	149
Blackman Sanatorium	Gen	Indiv	25	23	..	...	920
Contagious Disease Hosp	Unit of Grady Memorial Hospital						
Crawford W. Long Memorial Hospital★▲◇	Gen	NPAssn	324	*219*	*52*	*2,912*	*10,412*
Georgia Baptist Hospital★▲◇	Gen	Church	194	202	20	711	7,567
Grady Memorial Hosp★✝▲◇	Gen	City	625	393	95	2,532	13,062
Grady Memorial Hospital, *Emory University Division*	Unit of Grady Memorial Hospital						
Henrietta Egleston Hospital for Children✝▲◇	Chil	NPAssn	44	33		..	942
Jesse Parker Williams Hosp◇	Gen	NPAssn	66	53	..	..	2,602
Joseph B. Whitehead Memorial Hospital	Inst	State	30	6		.	380
Piedmont Hospital★✝▲◇	Gen	NPAssn	*132*	*122*	18	*733*	*4,337*
Ponce de Leon Eye, Ear and Throat Infirmary▲	ENT	Indiv	25	19	..	...	2,477
St. Joseph Infirmary★✝▲◇	Gen	Church	148	140	24	784	5,549
Station Hospital▲	Gen	*Army*	247	140	4	51	3,901
U. S Naval Air Station Dispensary	Gen	Navy	166	50	12	169	2,161
U S. Penitentiary Hospital▲	Inst	USPHS	133	80	..	..	1,562
Veterans Admin Hospital▲	Gen	Vet	415	358	.	.	4,066
William A. Harris Memorial Hospital	Gen	Corp	30	24	4	90	961
Augusta, 65,919—Richmond							
University Hospital★✝▲◇	GenTb	City	400	322	50	1,513	10,438
Veterans Admin. Hospital▲	Ment	Vet	1,417	1,182	.	...	1,165
Wilhenford Hospital	Unit of University Hospital						
Bainbridge, 6,352—Decatur							
Bainbridge Hospital	Gen	Indiv	32	14	6	124	483
Riverside Hospital	Gen	Part	32	20	7	161	1,050
Barwick, 409—Brooks							
Sanchez Private Sanitarium	Gen	Indiv	20	7	4	35	450
Blakely, 2,774—Early							
S. P Holland Hospital	Gen	Indiv	10	10	2	261	1,175
Brunswick, 15,035—Glynn							
Brunswick City Hospital	*Gen*	City	*96*	*50*	*25*	*610*	2,881
Butler, 1,693—Taylor							
Montgomery Hospital	Gen	Indiv	20	10	5	111	608
Cairo, 4,653—Grady							
Cairo Hospital	Gen	Indiv	22	12	6	109	615
Calhoun, 2,955—Gordon							
Johnson Hall Hospital	Gen	Indiv	25	20	5	218	741
Canton, 2,651—Cherokee							
Coker's Hospital	Gen	Indiv	36	27	5	211	1,478
Cartersville, 6,141—Bartow							
Wofford Stanford Hospital	Gen	Part	12	5	3	135	4[illegible]0
Columbus, 53,280—Muscogee							
Columbus City Hospital★▲◇	Gen	City	300	149	30	1,094	7,420
Cuthbert, 3,447—Randolph							
Patterson Hospital▲	Gen	Indiv	42	32	10	163	1,2[illegible]
Dalton, 10,448—Whitfield							
Hamilton Memorial Hospital	Gen	NPAssn	50	42	15	456	2,8[illegible]
Decatur, 16,561—De Kalb							
Scottish Rite Hospital for *Crippled Children*✝▲◇	Orth	NPAssn	61	30	..	..	162
Douglas, 5,175—Coffee							
Douglas Hospital	Gen	City	30	20	6	205	1,831
Dublin, 7,814—Laurens							
Claxton Sanitarium	Gen	Indiv	65	45	8	190	2,165
Coleman Hospital	Gen	*Indiv*	45	*No data supplied*			
U. S Naval Hospital★▲	*Gen*	Navy	1,000	671	6	15	2,[illegible]84
Eastman, 3,311—Dodge							
Coleman Sanatorium▲	Gen	Indiv	38	12	5	69	86[illegible]
Elberton, 6,188—Elbert							
Elbert County Hospital	Gen	CyCo	18	15	4	91	740
Thompson Johnson Hosp	Gen	Part	20	12	4	97	98[illegible]
Emory University, 250—De Kalb							
Emory University Hosp★✝▲◇	Gen	NPAssn	271	233	30	1,21[illegible]	8,614
Fort Benning,—*Chattahoochee*							
Regional Hospital▲	Gen	Army	664	426	15	191	12,[illegible]
Fort Oglethorpe, 800—Catoosa							
Station Hospital▲	Gen	Army	271	161	5	25	2,169
Gainesville, 10,243—Hall							
Downey Hospital▲	Gen	Corp	52	25	6	311	1,919
Hall County Memorial Hosp	Gen	County	36	23	10	214	1,137
Griffin, 13,222—Spalding							
R. F. Strickland and Son Me*morial Hospital*▲	Gen	CyCo	31	27	6	4[illegible]6	1,1[illegible]
Hawkinsville, 3,000—Pulaski							
R J. Taylor Memorial Hosp	Gen	NPAssn	42	16	8	12[illegible]	815
Homerville, 1,522—Clinch							
Huey Hospital	Gen	Indiv	17	...	1	Reported	
Hoschton, 764—*Jackson*							
Allen Clinic and Hospital	Gen	Part	15	..*No data supplied*			

Key to symbols and abbreviations is on page 1091

GEORGIA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Jesup, 2,903—Wayne							
Colvin, Ritch and Leaphart Hospital	Gen	Part	33	17	9	366	1,386
La Grange, 21,983—Troup							
City-County Hospital▲	Gen	CyCo	68	56	7	411	2,835
Macon, 57,865—Bibb							
Clinic Hospital	Gen	Corp	26	24	6	171	1,637
Hopewell Sanatorium	Unit of Macon Hospital						
Macon Hospital★▲◇	GenTb	CyCo	289	172	37	1,158	7,731
Mercy Hospital▲	Gen	Church	42	35	10	198	1,402
Middle Georgia Hospital▲	Gen	Corp	50	45	10	262	2,682
St. Luke Hospital	Gen	NPAssn	30	17	5	45	520
Marietta, 8,667—Cobb							
Marietta Hospital	Gen	Corp	49	..No data supplied			
Metter, 1,823—Candler							
Kennedy Memorial Hospital	Gen	Part	20	15	8	65	996
Milledgeville, 6,778—Baldwin							
Allen's Invalid Home	N&M	Indiv	130	129	..	...	309
Baldwin Memorial Hospital▲	Gen	Indiv	70	33	10	242	1,784
Milledgeville State Hospital◇	Ment	State	8,200	8,442	..	...	2,032
Scott Hospital	Gen	Indiv	25	21	6	85	605
Millen, 2,820—Jenkins							
Millen Hospital▲	Gen	Indiv	24	13	8	66	725
Mulkey Hospital	Gen	Part	20	18	10	116	829
Montezuma, 2,346—Macon							
Macon County Clinic	Gen	Part	30	20	4	100	858
Riverside Sanatorium	Gen	Indiv	35	9	6	102	962
Moultrie, 10,147—Colquitt							
Vereen Memorial Hospital	Gen	NPAssn	50	40	12	256	2,160
Nashville, 2,449—Berrien							
Askew Memorial Hospital	Gen	Indiv	16	7	6	120	600
Ocilla, 2,124—Irwin							
Ocilla Hospital	Gen	Part	30	15	6	274	909
Quitman, 4,450—Brooks							
Brooks County Hospital	Gen	CyCo	32	23	8	194	1,257
Reidsville, 805—Tattnall							
Jelks Hospital	Gen	Indiv	13	9	2	75	500
Rome, 26,282—Floyd							
Floyd County Hospital	Gen	County	75	40	15	851	2,636
Harbin Hospital▲	Gen	Corp	60	85	12	145	2,814
McCall Hospital▲	Gen	Corp	68	48	12	707	4,132
Royston, 1,549—Franklin							
Brown's Hospital	Gen	Indiv	20	8	2	52	465
Sandersville, 3,566—Washington							
Rawlings Sanitarium▲	Gen	NPAssn	68	33	7	154	1,292
Savannah, 95,996—Chatham							
Central of Georgia Railway Hospital▲	Indus	NPAssn	76	54	..	...	2,208
Charity Hospital	Gen	NPAssn	65	50	14	275	2,867
Georgia Infirmary	Gen	NPAssn	95	35	17	226	2,429
Oglethorpe Sanatorium	Gen	Corp	50	40	10	109	2,044
St. Joseph's Hospital▲◇	Gen	Church	125	92	30	743	4,004
Southeastern Medical Center	Ven	USPHS	236	165	6	7	7,076
Telfair Hospital	Gen	NPAssn	89	49	38	615	3,329
U S. Marine Hospital▲	Gen	USPHS	180	132	..	...	2,261
Warren A. Candler Hospital◇	Gen	Church	127	105	14	609	4,962
Smyrna, 1,440—Cobb							
Brawner's Sanitarium	N&M	Indiv	45	41	..	...	918
Statesboro, 5,028—Bulloch							
Bulloch County Hospital	Gen	County	50	50	7	283	1,918
Van Buren's Sanitarium	Gen	Indiv	25	25	6	30	225
Thomasville, 12,683—Thomas							
John D. Archbold Memorial Hospital▲	Gen	NPAssn	100	83	15	254	4,172
Tifton, 5,228—Tift							
Tift County Hospital	Gen	County	40	35	10	370	1,574
Toccoa, 5,494—Stephens							
Stephens County Hospital	Gen	County	34	13	8	290	1,214
Trion, 3,800—Chattooga							
Riegel Community Hospital	Gen	NPAssn	28	14	12	135	855
Valdosta, 15,595—Lowndes							
Little-Griffin Hospital	Gen	NPAssn	70	50	12	444	3,266
Vidalia, 4,109—Toombs							
City Hospital	Gen	City	18	2	5	189	622
Walker Park,—Walton							
Walton County Hospital	Gen	CyCo	37	18	12	243	1,356
Warm Springs, 608—Meriwether							
Georgia Warm Springs Foundation+▲	Orth	NPAssn	125	122	..	...	630
Washington, 3,587—Wilkes							
Washington General Hosp.	Gen	City	44	36	8	314	2,159
Waycross, 16,763—Ware							
Atlantic Coast Line Hosp.▲	Indus	NPAssn	75	42	..	...	1,439
Ware County Hospital	Gen	County	85	50	15	494	2,601
West Point, 3,591—Troup							
Valley Hospital	Gen	NPAssn	28	21	5	270	1,995

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Atlanta, 302,288—Fulton							
Dwelle's Infirmary	Gen	Indiv	20	15	3	55	450
Florence Crittenton Home	Mat	NPAssn	25	20	16	71	80
Georgia Sanitarium	Gen	Indiv	5	2	2	1	24
Our Lady of Perpetual Help Free Cancer Home	Cancer	Church	80	43	..	...	184
Clayton, 1,088—Rabun							
Rabun County Maternity Hospital	Mat	County	12	5	10	176	184
Columbus, 53,280—Muscogee							
Muscogee County Tuberculosis Hospital	TB	County	40	30	..	...	50
Cordele, 7,929—Crisp							
Gillespie Hospital	Gen	Church	25	10	6	25	432
Gracewood, 500—Richmond							
Georgia Training School for Mental Defectives	MeDe	State	476	423	..	...	71
Lyons, 1,900—Toombs							
Aiken Hospital	Gen	Indiv	9	6	3	63	432
Stone Mountain, 1,408—De Kalb							
Brook Haven Manor Sanit.	N&M	Indiv	30	30	..	...	175
Summerville, 1,358—Chattooga							
Summerville-Trion Hospital	Gen	Corp	20	5	6	166	523
Villa Rica, 1,522—Carroll							
Community Hospital	Gen	Indiv	15	9	6	...	600
Wrightsville, 1,760—Johnson							
Bray's Hospital	Gen	Indiv	20	18	6	83	441

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Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
American Falls, 1,439—Power							
Schiltz Memorial Hospital	Gen	County	23	9	8	157	645
Blackfoot, 3,681—Bingham							
State Hospital South	Ment	State	709	666	..	...	112
Boise, 26,130—Ada							
St. Alphonsus Hospital▲◇	Gen	Church	151	106	30	773	4,001
St. Luke's Hospital▲◇	Gen	Church	126	107	28	692	5,114
Veterans Admin. Center▲	Gen	Vet	148	90	..	...	1,234
Bonners Ferry, 1,345—Boundary							
Boundary County Hospital	Gen	County	18	6	8	120	290
Burley, 5,329—Cassia							
Cottage Hospital	Gen	Corp	22	18	10	155	712
Caldwell, 7,272—Canyon							
Caldwell Sanitarium	Gen	Part	22	11	7	74	450
Coeur d'Alene, 10,049—Kootenai							
Coeur d'Alene Hospital	GenTb	NPAssn	27	18	..	...	68
Lake City General Hospital	Gen	Indiv	47	38	14	241	1,429
Cottonwood, 673—Idaho							
Our Lady of Consolation Hospital	Gen	Church	35	26	10	114	733
Council, 692—Adams							
Community Hospital	Gen	NPAssn	18	15	6	91	660
Farragut, —Kootenai							
U. S. Naval Hospital★▲	Gen	Navy	4,341	2,044	15	211	12,957
Gooding, 2,568—Gooding							
Gooding County Hospital	Gen	NPAssn	18	5	6	150	575
Grangeville, 1,929—Idaho							
General Hospital	Gen	City	26	8	6	40	480
Hailey, 1,443—Blaine							
Hailey Clinical Hospital	Gen	Indiv	22	9	7	108	498
Idaho Falls, 15,024—Bonneville							
Idaho Falls Latter-Day Saints' Hospital▲◇	Gen	Church	130	76	35	673	3,638
Sacred Heart Hospital▲	Gen	Church	30	26	7	158	931
Kellogg, 4,235—Shoshone							
Wardner Hospital	Gen	Part	35	20	8	152	1,136
Ketchum, 1,300—Blaine							
U. S. Naval Convalescent Hospital	Conv	Navy	1,165	806	2	9	3,262
Lewiston, 10,548—Nez Perce							
St. Joseph's Hospital▲◇	Gen	Church	119	79	16	450	2,900
White Hospital	Gen	NPAssn	30	10	6	45	416
Malad City, 2,731—Oneida							
Oneida Hospital	Gen	NPAssn	17	9	7	151	578
Moscow, 6,014—Latah							
Gritman Memorial Hospital	Gen	NPAssn	58	21	12	268	907
Nampa, 12,149—Canyon							
Mercy Hospital▲◇	Gen	Church	92	78	16	547	4,382
Nazarene Missionary Sanitarium (Samaritan Hospital Division)▲◇	Gen	Church	50	34	6	119	1,270
Orofino, 1,602—Clearwater							
Orofino Hospital	Gen	Part	38	8	4	59	339
State Hospital North	Ment	State	452	422	..	...	88
Pocatello, 18,133—Bannock							
Pocatello General Hospital▲◇	Gen	CyCo	80	62	22	459	2,445
St. Anthony's Mercy Hosp.▲◇	Gen	Church	100	66	25	510	3,861
Preston, 4,236—Franklin							
General Memorial Hospital	Gen	NPAssn	17	12	8	203	422
Rexburg, 3,437—Madison							
Harlo B. Rigby Hospital	Gen	Indiv	14	7	6	117	425
Rupert General Hospital	Gen	Indiv	11	6	4	59	461
St. Maries, 2,234—Benewah							
St. Maries Hospital	Gen	Part	25	8	3	46	274
Sandpoint, 4,356—Bonner							
Community Hospital	Gen	NPAssn	35	26	8	269	481
Soda Springs, 1,057—Caribou							
Caribou County Hospital	Gen	County	36	12	11	114	655
Twin Falls, 11,851—Twin Falls							
Twin Falls County General Hospital	Gen	County	88	69	28	791	3,298
Wallace, 3,839—Shoshone							
Providence Hospital▲	Gen	Church	30	25	12	105	850
Wallace Hospital	Gen	Part	40	..No data supplied			
Wendell, 1,001—Gooding							
St. Valentine's Hospital	Gen	Church	31	32	12	373	1,176

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Boise, 26,130—Ada							
Booth Memorial Hospital	Mat	Church	27	3	14	86	141
Nampa, 12,149—Canyon							
State School and Colony	MeDe	State	621	609	..	...	64
Priest River, 1,056—Bonner							
Priest River Hospital	Gen	Indiv	10	6	2	8	76

Key to symbols and abbreviations is on page 1091

ILLINOIS

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Alton, 31,255—Madison							
Alton Memorial Hospital+▲○	Gen	Church	120	104	25	712	4,513
Alton State Hospital	Ment	State	1,840	1,698	..	...	635
St. Anthony's Infirmary and Sanitarium	Gen	Church	95	81	..	...	993
St. Joseph's Hospital+▲○	Gen	Church	165	117	32	676	4,881
Amboy, 1,986—Lee							
Amboy Public Hospital	Gen	NPAssn	11	8	4	95	295
Anna, 4,092—Union							
Anna State Hospital	Ment	State	2,363	2,181	..	...	598
Hale-Willard Memorial Hosp.	Gen	City	15	8	7	251	473
Aurora, 47,170—Kane							
Copley Hospital▲○	Gen	NPAssn	130	109	25	593	3,956
Kane County Springbrook Sanitarium	TB	County	80	70	..	...	76
Mercyville Sanitarium⊙	N&M	Church	163	151	..	...	439
St. Charles Hospital▲○	Gen	Church	125	85	28	545	2,915
St. Joseph Mercy Hospital▲○	Gen	Church	128	128	30	569	3,927
Avon, 803—Fulton							
Saunders Hospital	Gen	NPAssn	15	9	7	92	229
Batavia, 5,101—Kane							
Fox River Sanitarium	TB	NPAssn	75	49	..	...	60
Belleville, 28,405—St. Clair							
St. Elizabeth's Hospital	Gen	Church	128	113	32	936	4,507
Belvidere, 8,094—Boone							
Highland Hospital	Gen	NPAssn	32	25	10	119	710
St. Joseph's Hospital	Gen	Church	35	23	11	160	997
Benton, 7,372—Franklin							
Moore Hospital	Gen	Indiv	25	12	2	9	336
Berwyn, 48,451—Cook							
MacNeal Memorial Hosp.+▲	Gen	NPAssn	150	129	60	1,427	6,350
Bloomington, 32,868—McLean							
Mennonite Hospital○	Gen	Church	102	91	25	717	3,276
St. Joseph's Hospital▲○	Gen	Church	175	180	25	572	3,562
Blue Island, 16,638—Cook							
St. Francis Hospital+▲	Gen	Church	85	87	15	682	3,970
Breese, 2,206—Clinton							
St. Joseph Hospital	Gen	Church	62	30	12	231	903
Bushnell, 2,906—McDonough							
"Elmgrove" McDonough County Tuberculosis Sanatorium	TB	County	40	29	..	...	28
Cairo, 14,407—Alexander							
Alexander County Tuberculosis Sanatorium	TB	County	40	39	..	...	124
St. Mary's Infirmary▲○	Gen	Church	100	59	12	496	3,199
Canton, 11,577—Fulton							
Graham Hospital○	Gen	NPAssn	86	68	25	616	3,365
[illegible] 9,550—Jackson							
[illegible]	Gen	Church	75	31	12	306	1,747
[illegible]	Gen	Indiv	26	21	6	243	1,056
[illegible]	Gen	NPAssn	20	12	8	118	605
Centralia, 16,343—Marion							
St. Mary's Hospital	Gen	Church	85	58	15	577	2,182
Champaign, 23,302—Champaign							
Burnham City Hospital▲○	Gen	City	115	112	25	748	4,540
Charleston, 8,197—Coles							
M. A. Montgomery Memorial [illegible]	Gen	NPAssn	33	15	12	140	540
[illegible]							
[illegible] Hosp.	Unit of University of Chicago Clinics						
[illegible] ★+▲○	Gen	Church	264	208	..	...	4,804
[illegible] ★▲	Gen	NPAssn	175	114	25	575	7,087
Augustana Hospital★+▲○	Gen	Church	275	260	30	893	7,511
Belmont Community Hosp.★	Gen	NPAssn	100	80	25	738	4,083
Bethany Methodist Hospital▲	Gen	Church	25	20	..	...	906
Bethany Sanitarium and Hospital▲	Gen	Church	58	43	21	528	2,567
Bobs Roberts Memorial Hospital for Children	Unit of University of Chicago Clinics						
Burrows Hospital	Gen	Indiv	40	13	6	103	582
Chicago Eye, Ear, Nose and Throat Hospital	ENT	Corp	75	13	..	...	883
Chicago Fresh Air Hospital	TB	NPAssn	65	45	..	...	166
Chicago Intensive Treatment Center	Ven	City	200	129	..	...	5,283
Chicago *Lying-In Hospital*+▲⊙	Unit of University of Chicago Clinics						
Chicago Memorial Hosp.★+▲	Gen	NPAssn	88	70	20	240	2,670
Chicago State Hospital+▲⊙	Ment	State	4,758	4,625	..	...	1,437
Children's Memorial Hosp.+▲⊙	Chil	NPAssn	246	119	..	...	3,606
City of Chicago Municipal Tuberculosis Sanitarium+▲⊙	TB	City	1,216	1,002	..	...	1,370
Columbus Hospital★▲○	Gen	Church	132	81	18	275	3,385
Cook County Children's Hosp.	Unit of Cook County Hospital						
Cook County Hospital★+▲○	Gen	County	3,400	2,320	261	4,295	59,874
Cook County Psychopathic Hospital	Unit of Cook County Hospital						
Edgewater Hospital★▲	Gen	NPAssn	135	102	38	699	5,531
Englewood Hospital★▲○	Gen	NPAssn	157	131	32	812	5,674
Evangelical Hospital★▲○	Gen	Church	185	191	60	1,833	7,845
Fairview Sanitarium	N&M	Corp	43	35	..	...	863
Frank Cuneo Hospital	Mat	Church	29	24	30	719	801
Franklin Boulevard Hosp.○	Gen	Corp	58	47	16	370	2,351
Garfield Park Community Hospital★▲○	Gen	NPAssn	150	107	32	1,052	4,398
Grant Hospital★+▲○	Gen	NPAssn	243	192	45	1,309	7,553
Henrotin Hospital★+▲○	Gen	NPAssn	100	83	25	546	3,320
Holy Cross Hospital★▲	Gen	Church	125	111	36	1,129	3,995
Home for Destitute Crippled Children	Unit of University of Chicago Clinics						
Hospital of St. Anthony de Padua★▲○	Gen	Church	204	185	37	1,282	6,671

ILLINOIS—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Illinois Central Hospital★▲	Gen	NPAssn	250	191	40	847	5,873
Illinois Eye and Ear Infirmary+▲	ENT	State	150	87	..	...	3,183
Illinois Masonic Hospital★+▲○	Gen	NPAssn	159	136	27	676	5,280
Illinois Neuropsychiatric *Institute*+⊙	Ment	State	93	45	..	...	576
Illinois Surgical Institute for Children⊙	Unit of Research and Educational Hosps.						
Jackson Park Hospital★▲○	Gen	Corp	186	104	40	512	4,555
Kenner Hospital	Gen	NPAssn	40	18	6	59	659
La Rabida Jackson Park Sanitarium	CardChil	NPAssn	100	51	..	...	114
Lewis Memorial Maternity *Hospital*+▲	Mat	Church	106	30	100	996	1,284
Loretto Hospital★▲	Gen	Church	137	104	30	843	4,272
Lutheran Deaconess Home and Hospital★▲○	Gen	Church	176	157	42	950	6,431
Martha Washington Hospital	Gen	NPAssn	75	63	15	390	3,123
Mercy Hospital, Loyola University Clinics★+▲○	Gen	Church	320	267	40	746	8,373
Michael Reese Hospital★+▲○	Gen	NPAssn	625	458	80	1,880	15,004
Misericordia Hospital and Home for Infants▲	Mat	Church	58	7	19	160	169
Mother Cabrini Memorial Hospital★▲○	*Gen*	*Church*	*124*	*89*	*30*	*801*	*4,049*
Mount Sinai Hospital★+▲○	Gen	NPAssn	233	197	44	1,031	7,307
Municipal Contagious Disease Hospital+▲⊙	Iso	City	428	68	..	...	1,751
North Chicago Hospital	Gen	NPAssn	58	35	14	226	1,563
Norwegian-American Hospital★+▲○	Gen	NPAssn	181	180	50	1,294	6,228
Orthopaedic Institute	See Illinois Surgical Institute for Children						
Parkway Sanitarium	N&M	Corp	50	46	..	...	222
Passavant Memorial Hosp.★+▲	Gen	NPAssn	220	213	35	922	6,181
Pinel Sanitarium	N&M	NPAssn	50	30	..	...	297
Presbyterian Hospital★+▲○	Gen	Church	429	357	51	1,201	11,744
Provident Hospital★+▲○	Gen	NPAssn	155	132	25	889	3,892
Ravenswood Hospital★+▲○	Gen	NPAssn	163	131	45	1,244	5,324
Research and Educational Hospitals★+▲	Gen	State	514	313	34	618	4,093
Roseland Community Hospital★▲○	Gen	NPAssn	101	79	24	743	4,374
St. Anne's Hospital★+▲○	Gen	Church	290	269	60	1,996	8,289
St. Anthony de Padua Hosp.	See Hospital of St. Anthony de Padua						
St. Bernard's Hospital★▲○	Gen	Church	189	183	42	925	8,822
St. Elizabeth Hospital★+▲○	Gen	Church	265	218	77	1,005	8,573
St. George Hospital▲	Gen	Church	100	66	..	...	2,694
St. Joseph Hospital★+▲○	Gen	Church	260	220	40	1,096	7,181
St. Luke's Hospital★+▲○	Gen	NPAssn	530	478	55	1,338	13,987
St. Mary of Nazareth *Hospital*★+▲○	*Gen*	*Church*	*239*	*191*	*60*	*1,032*	*10,884*
St. Vincent's Infant and Maternity Hospital+▲⊙	MatCh	Church	290	201	20	320	1,295
Sarah Morris Hospital for *Children*	*Unit of Michael Reese Hospital*						
Shriners Hospital for Crippled Children+▲	Orth	NPAssn	60	48	..	...	219
South Chicago Community Hospital▲○	Gen	NPAssn	135	95	40	991	4,805
South Shore Hospital○	Gen	Corp	100	74	20	673	3,781
Southtown Hospital	Gen	NPAssn	70	59	17	448	2,851
Swedish Covenant Hosp.★+▲○	Gen	Church	193	176	65	1,679	6,439
U. S. Marine Hospital★+▲	Gen	USPHS	306	201	..	...	3,370
University Hospital★▲○	Gen	NPAssn	100	72	..	...	3,510
University of Chicago Clinics★+▲	Gen	NPAssn	526	427	134	3,428	11,921
Veterans Rehabilitation Center+	Ment	State	40	40	..	...	127
Walther Memorial Hosp.★○	Gen	Church	175	106	31	918	5,357
Wesley Memorial Hosp.★+▲○	Gen	Church	467	457	51	1,330	11,482
Women and Children's Hospital★+▲○	*Gen*	*NPAssn*	125	81	30	966	3,591
Woodlawn Hospital★▲	Gen	NPAssn	115	90	22	436	3,429
Chicago Heights, 22,461—Cook							
St. James Hospital▲	Gen	Church	118	85	21	713	4,059
Clinton, 6,331—De Witt							
John Warner Hospital	Gen	City	36	20	8	117	736
Danville, 36,919—Vermilion							
Lake View Hospital▲○	Gen	NPAssn	145	112	25	551	3,772
St. Elizabeth Hospital▲○	Gen	Church	185	141	35	890	5,517
Vermilion County Tuberculosis Dispensary and Hospital▲	TB	County	60	44	..	...	57
Veterans Admin. Hospital▲	Ment	Vet	2,298	2,138	..	...	1,142
Decatur, 59,305—Macon							
Decatur and Macon County Hospital▲○	Gen	NPAssn	202	151	50	862	5,913
Macon County Tuberculosis Sanatorium+▲	TB	County	80	73	..	...	70
St. Mary's Hospital	Gen	Church	240	218	25	1,068	7,615
W[illegible] Hosp.▲	Indus	NPAssn	75	42	..	...	1,207
De [illegible]							
D[illegible] Sanatorium	TB	County	23	13	..	...	27
De Kalb Public Hospital▲	Gen	City	35	30	10	222	731
St. Mary's Hospital▲	*Gen*	*Church*	50	40	10	103	1,111
Des Plaines, 9,518—Cook							
Forest Sanitarium	N&M	Indiv	26	17	..	...	133
Dixon, 10,671—Lee							
Dixon Public Hospital▲○	Gen	NPAssn	105	69	22	423	1,479
Downey, —Lake							
Veterans Admin. Hospital▲	Ment	Vet	2,050	1,783	..	...	1,521

Key to symbols and abbreviations is on page 1091

ILLINOIS—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census†	Bassinets	Number of Births	Admissions†
Dunning, —Cook							
Chicago State Hospital	See Chicago						
Du Quoin, 7,515—Perry							
Marshall Browning Hospital	Gen	NPAssn	48	35	12	286	1,379
Dwight, 2,499—Livingston							
Veterans Admin. Hospital▲	Gen	Vet	196	140	..	...	1,174
East Moline, 12,359—Rock Island							
East Moline State Hospital	Ment	State	2,275	2,050	..	...	653
East St. Louis, 75,609—St. Clair							
Christian Welfare Hospital▲○	Gen	NPAssn	140	107	33	837	3,953
Pleasant View Sanatorium+	TB	County	100	95	..	...	90
St. Mary's Hospital★▲○	Gen	Church	265	184	36	752	5,456
Edwardsville, 8,008—Madison							
Madison County Sanatorium▲	TB	County	99	71	..	...	85
Effingham, 6,180—Effingham							
St. Anthony's Hospital	Gen	Church	95	89	15	475	2,522
Eldorado, 4,891—Saline							
Ferrell Hospital	Gen	Part	23	9	8	147	465
Elgin, 38,333—Kane							
Elgin State Hospital+	Ment	State	4,910	4,893	..	...	1,592
Resthaven Sanitarium	N&M	Indiv	85	70	..	...	87
St. Joseph Hospital▲○	Gen	Church	150	112	27	575	3,880
Sherman Hospital▲○	Gen	NPAssn	125	127	30	606	4,188
Elmhurst, 15,458—Du Page							
Elmhurst Community Hosp.★▲	Gen	NPAssn	113	112	35	826	5,073
Evanston, 65,389—Cook							
Community Hospital	Gen	NPAssn	28	14	7	70	616
Evanston Hospital★+▲○	Gen	NPAssn	246	215	46	1,302	7,569
St. Francis Hospital★+▲○	Gen	Church	346	258	74	1,497	9,182
Evergreen Park, 3,313—Cook							
Little Company of Mary Hospital★+▲○	Gen	Church	200	172	65	1,947	7,892
Fairbury, 2,300—Livingston							
Fairbury Hospital	Gen	NPAssn	29	21	16	287	1,006
Fort Sheridan, —Lake							
Regional Station Hospital▲	Gen	Army	160	149	6	27	3,260
Freeport, 22,366—Stephenson							
Deaconess Hospital▲○	Gen	NPAssn	81	63	25	470	2,353
St. Francis Hospital▲○	Gen	Church	125	88	20	395	3,285
▲	Gen	NPAssn	100	77	25	519	2,762
..	Gen	Church	100	97	17	349	2,791
Geneseo, 3,824—Henry							
J. C. Hammond City Hosp.▲	Gen	City	27	21	10	199	819
Geneva, 4,101—Kane							
Communty Hospital▲	Gen	NPAssn	73	48	20	222	1,443
Glenview, 2,500—Cook							
U. S. Naval Air Station Dispensary	Gen	Navy	150	30	..	...	1,926
Granite City, 22,974—Madison							
St. Elizabeth Hospital▲○	Gen	Church	125	101	25	729	3,740
Great Lakes, —Lake							
U. S. Naval Hospital★+▲	Gen	Navy	8,741	5,855	..	...	54,700
Harrisburg, 11,453—Saline							
Harrisburg Hospital	Gen	Corp	30	10	5	21	385
Lightner Hospital	Gen	Indiv	30	14	10	284	1,096
Harvard, 3,121—McHenry							
Harvard Community Hosp.	Gen	Part	21	15	8	123	460
Harvey, 17,878—Cook							
Ingalls Memorial Hospital▲	Gen	NPAssn	95	70	25	717	4,162
Herrin, 9,352—Williamson							
Herrin Hospital	Gen	Corp	80	54	24	398	1,917
Highland, 3,820—Madison							
St. Joseph's Hospital	Gen	Church	84	55	16	339	2,114
▲	Gen	NPAssn	51	31	17	360	1,477
	Gen	NPAssn	46	35	10	244	1,085
Hines, —Cook							
Veterans Admin. Center+▲⊙	Gen	Vet	1,925	1,600	..	...	11,593
Hinsdale, 7,336—Du Page							
Hinsdale Sanitarium and Hospital▲○	Gen	Church	100	104	15	368	2,786
Jacksonville, 19,844—Morgan							
Jacksonville State Hospital⊙	Ment	State	3,315	3,075	..	...	705
Morgan County Tuberculosis Sanatorium "Oaklawn"	TB	County	32	26	..	...	33
Norbury Sanatorium▲	N&M	Corp	125	85	..	...	145
Our Saviour's Hospital▲○	Gen	Church	80	51	15	239	1,534
Passavant Memorial Hosp.▲○	Gen	Church	84	65	12	301	1,957
Joliet, 42,365—Will							
Illinois State Penitentiary Hospital	Inst	State	153	40	..	...	1,867
St. Joseph's Hospital★▲○	Gen	Church	303	250	43	1,152	7,393
Silver Cross Hospital▲○	Gen	NPAssn	178	122	30	696	4,177
Will County Tuberculosis Sanatorium	TB	County	100	69	..	...	66
Kankakee, 22,241—Kankakee							
Kankakee State Hospital	Ment	State	4,000	3,740	..	...	1,118
St. Mary's Hospital▲○	Gen	Church	182	152	38	894	4,987
Kenilworth, 2,935—Cook							
Kenilworth Sanitarium	N&M	Indiv	50	44	..	...	226
Kewanee, 16,901—Henry							
Kewanee Public Hospital▲	Gen	NPAssn	52	42	11	190	1,540
St. Francis Hospital▲○	Gen	Church	100	81	18	292	1,672
Lake Forest, 6,885—Lake							
Lake Forest Hospital▲	Gen	NPAssn	40	31	10	200	951
La Salle, 12,812—La Salle							
St. Mary's Hospital▲○	Gen	Church	90	77	15	323	2,192
Libertyville, 3,930—Lake							
Condell Memorial Hospital	Gen	NPAssn	25	23	10	210	1,038
Lincoln, 12,752—Logan							
Evangelical Deaconess Hosp.○	Gen	Church	65	42	14	260	1,442
St. Clara's Hospital	Gen	Church	60	49	6	169	1,721
Litchfield, 7,048—Montgomery							
St. Francis Hospital	Gen	Church	143	120	17	397	3,275
Mackinaw, 845—Tazewell							
Oak Knoll Sanatorium	TB	County	44	29	..	...	46
Macomb, 8,764—McDonough							
Phelps Hospital	Gen	NPAssn	45	30	10	182	852
St. Francis Hospital○	Gen	Church	88	85	12	329	2,900
Manteno, 1,537—Kankakee							
Manteno State Hospital+▲	Ment	State	6,989	6,350	..	...	1,685
Marion, 9,251—Williamson							
Veterans Admin. Hospital▲	Gen	Vet	214	127	..	...	1,970
Mattoon, 15,827—Coles							
Memorial Methodist Hospital	Gen	Church	50	36	10	377	1,674
Melrose Park, 10,933—Cook							
Westlake Hospital▲	Gen	NPAssn	66	48	25	756	3,149
Mendota, 4,215—La Salle							
Harris Hospital	Gen	Part	27	19	8	215	699
Metropolis, 6,287—Massac							
Fisher Hospital	Gen	Indiv	16	8	5	125	476
Moline, 34,608—Rock Island							
Lutheran Hospital▲○	Gen	Church	135	104	36	697	3,444
Moline Public Hospital★▲○	Gen	City	198	188	48	1,086	6,177
Monmouth, 9,096—Warren							
Monmouth Hospital▲	Gen	City	72	66	18	327	1,603
Monticello, 2,523—Piatt							
John and Mary E. Kirby Hospital	Gen	NPAssn	30	18	8	99	572
Morris, 6,145—Grundy							
Morris Hospital	Gen	NPAssn	40	21	14	334	890
Mount Vernon, 14,724—Jefferson							
Good Samaritan Hospital	Gen	Church	33	30	12	379	1,273
Moweaqua, 1,366—Shelby							
Moweaqua Hospital	Gen	Indiv	30	22	5	53	140
Murphysboro, 8,976—Jackson							
St. Andrew's Hospital▲	Gen	Church	36	21	10	220	1,015
Naperville, 5,272—Du Page							
Edward Sanatorium▲	TB	NPAssn	110	101	..	...	203
Normal, 6,983—McLean							
Brokaw Hospital▲○	Gen	Church	94	77	..	...	1,846
Fairview Sanatorium	TB	County	56	29	..	...	33
North Riverside (Riverside P. O.), —Cook							
Municipal Tuberculosis Sanitarium (North Riverside Division)	TB	City	256	145	..	...	172
Oak Forest, 825—Cook							
Cook County Infirmary	Chr	County	2,569	2,209	..	...	862
Cook County Tuberculosis Hospital	TB	County	585	241	13	...	200
Oak Park, 66,015—Cook							
Oak Park Hospital★▲○	Gen	Church	140	109	44	778	4,570
West Suburban Hospital★▲○	Gen	NPAssn	312	283	100	2,333	8,570
Olney, 7,831—Richland							
Olney Sanitarium○	Gen	Corp	89	65	13	236	2,155
Oregon, 2,825—Ogle							
Warmolt's Clinic	Gen	Indiv	25	13	8	41	462
Ottawa, 16,005—La Salle							
Highland	TB	County	74	37	..	...	49
Ottawa Tuberculosis Sanat.▲	TB	Corp	133	118	..	...	121
Ryburn Memorial Hospital▲○	Gen	City	118	93	28	746	3,401
Pana, 5,966—Christian							
Huber Memorial Hospital▲○	Gen	Church	38	28	12	182	970
Paris, 9,281—Edgar							
Paris Hospital○	Gen	NPAssn	75	68	10	332	2,640
Paxton, 3,106—Ford							
Paxton Community Hospital	Gen	NPAssn	19	12	6	133	496
Pekin, 19,407—Tazewell							
Pekin Public Hospital	Gen	NPAssn	90	80	20	476	3,256
Peoria, 105,087—Peoria							
Costeff Sanatorium	N&M	Indiv	13	13	..	...	97
John C. Proctor Hospital○	Gen	NPAssn	110	72	14	319	3,019
Methodist Hospital of Central Illinois★+▲○	Gen	Church	200	149	40	986	5,886
Michell Farm Sanatorium	N&M	Indiv	28	28	..	...	37
Michell Sanatorium	N&M	Indiv	25	25	..	...	65
Peoria Municipal Tuberculosis Sanatorium+▲	TB	City	102	65	..	...	132
Peoria State Hospital+⊙	Ment	State	2,691	2,506	..	...	789
St. Francis Hospital★+▲○	Gen	Church	500	421	93	2,022	14,080
Peru, 8,983—La Salle							
Peoples Hospital	Gen	NPAssn	50	32	12	123	888
Pittsfield, 2,884—Pike							
Illini Community Hospital▲	Gen	NPAssn	40	27	10	195	1,109
Pontiac, 9,585—Livingston							
Livingston County Sanat.	TB	County	50	40	..	...	45
St. James Hospital	Gen	Church	44	31	15	266	823
Princeton, 5,224—Bureau							
Julia Rackley Perry Memorial Hospital	Gen	City	58	47	15	332	1,574
Quincy, 40,469—Adams							
Blessing Hospital▲○	Gen	NPAssn	125	97	25	527	3,170
Hillcrest	TB	County	50	36	..	...	42
St. Mary's Hospital★▲○	Gen	Church	180	145	25	607	5,151
Rantoul, 2,367—Champaign							
Regional Hospital+▲	Gen	Army	150	114	4	10	4,071
Red Bud, 1,302—Randolph							
St. Clement's Hospital	Gen	Church	22	17	12	218	600
Robinson, 4,311—Crawford							
Brooks Hospital	Gen	Part	22	16	6	174	600
Robinson Hospital	Gen	Part	12	5	4	21	126

Key to symbols and abbreviations is on page 1091

ILLINOIS—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Rochelle, 4,200—Ogle							
Rochelle Hospital	Gen	City	25	14	12	200	719
Rockford, 84,627—Winnebago							
Linlawn Sanitarium	N&M	Indiv	30	17	.	.	135
Rockford Memorial Hosp.▲○	Gen	NPAssn	100	77	20	403	3,062
Rockford Municipal Tuberculosis Sanatorium+▲	TB	CyCo	120	101	.	..	138
St Anthony's Hospital▲○	Gen	Church	240	222	60	1,261	6,196
Swedish American Hosp ▲○	Gen	NPAssn	125	114	30	826	5,037
Winnebago County Hospital	GenIso	County	76	51	6	4	813
Rock Island, 42,775—Rock Island							
Rock Island County Tuberculosis Sanatorium	TB	County	67	37	.	..	50
St. Anthony's Hospital+▲○	Gen	Church	150	148	30	493	4,024
Rosiclare, 1,774—Hardin							
Rosiclare Hospital	Gen	Part	17	3	5	63	223
Rushville, 2,460—Schuyler							
Culbertson Hospital	Gen	Indiv	25	15	9	68	592
St Charles, 5,870—Kane							
Delnor Hospital▲	Gen	NPAssn	30	18	10	196	813
Salem, 7,319—Marion							
Salem Memorial Hospital	Gen	NPAssn	55	23	10	276	1,257
Savanna, 4,792—Carroll							
Savanna City Hospital	Gen	City	26	16	12	195	609
Shelbyville, 4,092—Shelby							
Shelby County Memorial Hospital	Gen	NPAssn	21	16	6	152	552
[illegible] al	Gen	Indiv	12	5	2	102	236
[illegible]	Gen	Indiv	29	8	5	43	500
[illegible] ▲	Gen	NPAssn	229	170	35	619	5,298
[illegible]	TB	Corp	83	70		..	128
[illegible] n's School and Hospital	Orth	Church	55	39		...	72
St. John's Hospital	Gen	Church	621	612	79	1,563	15,822
St. [illegible]	TB	Church	200	150	.	...	213
Spring							
St [illegible]	Gen	Church	90	82	15	352	2,485
Sterli							
Home Hospital	Gen	NPAssn	25	12	6	13	450
Public Hospital▲○	Gen	City	58	40	14	433	1,987
Streator, 14,9_0—La Salle							
St Mary's Hospital	Gen	Church	109	89	12	623	3,990
Sycamore, 4,702—De Kalb							
Sycamore Municipal Hosp ▲	Gen	City	28	19	12	176	619
Taylorville, 8,313—Christian							
St Vincent Hospital	Gen	Church	90	68	22	373	2,500
Tuscola, 2,838—Douglas							
Douglas County Jarman Memorial Hospital	Gen	County	42	30	13	234	1,320
[illegible] ▲	Gen	Corp	60	41	10	183	1,740
[illegible] ital.	Gen	County	64	32	15	40	578
[illegible]	Gen	Church	103	86	19	644	3,551
The Outlook	TB	County	56	38		..	31
Vandalia, 5,288—Fayette							
Mark Greer Hospital	Gen	Indiv	30	24	12	229	1,253
[illegible]	Gen	NPAssn	44	29	21	390	1,446
Waukegan, 34,241—Lake							
Lake County General Hosp	Gen	County	60	53		..	441
Lake County Tuberculosis Sanatorium+▲	TB	County	100	88			192
[illegible] Hospital▲○	Gen	Church	150	140	38	769	6,066
[illegible] ▲	Gen	NPAssn	107	91	28	746	3,469
[illegible]	Gen	NPAssn	10	8	5	89	300
Winfield, 567—Du Page							
Winfield Sanatorium▲	TB	NPAssn	76	70			115
Zace Sanatorium	TB	NPAssn	50	37		..	60
Winnetka, 12,430—Cook							
North Shore Health Resort▲	N&M	Corp	83	67		...	443
Woodstock, 6,123—McHenry							
Woodstock Public Hospital	Gen	NPAssn	46	32	13	207	1,238

Related Institutions

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Arlington Heights, 5,668—Cook							
Magnus Farm	Conv	Indiv	15	16		..	18
Batavia, 5,101—Kane							
Bellevue Place Sanitarium	N&M	Corp	26	17		..	22
Belleville, 28,405—St. Clair							
St. Clair County Hospital and Home	InstGen	County	100	75	2	10	375
Chicago, 3,396,808—Cook							
Beverly Hills Rest Home	Conv	Indiv	10	9	..	...	26
Catherine Booth Memorial Convalescent Home	Conv	Church	20		.	Estab	1945
Chicago Home for Incurables	Incur	NPAssn	261	255		...	70
Convalescent Home	Conv	City	100	85	..	.	166
House of Correction Hosp	Inst	City	75	24	.	.	1,495
Long's Convalescent Home	Conv	Indiv	32	25	..	.	130
Martha Washington Home for Dependent Crippled Children	Orth	NPAssn	30	22	..	...	20
Reynolds Rest Home	Conv	Indiv	55	49	..	.	50
Rosary Hill Convalescent Home	Conv	Church	35	30	.	...	133
Salvation Army Booth Memorial Hospital	Mat	Church	21	13	12	224	264
Sheridan Mansion	Conv	Indiv	18	16	..	..	58

ILLINOIS—Continued

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Washington and Jane Smith Home	InstGen	NPAssn	23	12	.	...	110
Decatur, 59,305—Macon							
City Public Hospital	Iso	City	56	6	..	..	112
Des Plaines, 9,518—Cook							
Northwestern Hospital	Gen	NPAssn	14	6	5	109	231
Dixon, 10,671—Lee							
Dixon State Hospital	MeDe	State	4,806	4,473	10	7	719
Evanston, 65,389—Cook							
Broadhurst Nursing Home	Conv	Part	27	20	..	.	61
The Cradle	Chil	NPAssn	56	29	..	.	133
Virginia Hall Nursing Home	Conv	Part	56	32	.	.	54
Geneva, 4,101—Kane							
State Training School for Girls	Inst	State	22	17	15	.	329
Godfrey, 300—Madison							
Beverly Farm	MeDe	Corp	145	135	..	...	21
Lincoln, 12,752—Logan							
Lincoln State School and Colony	MeDe	State	4,591	4,425	3	2	261
Mattoon, 15,827—Coles							
Independent Order Odd Fellows Old Folks Home Hosp.	Inst	NPAssn	55	16		.	123
Menard, 22—Randolph							
Illinois Security Hospital	Ment	State	490	377	.		58
Minonk, 1,897—Woodford							
Woodford County Tuberculosis Sanatorium	TB	County	12	10	.	.	4
Mooseheart, 995—Kane							
Philadelphia Memorial Hospital	ChilInst	NPAssn	60	45		.	1,619
Normal, 6,983—McLean							
Illinois Soldiers' and Sailors' Children's School Hospital	Inst	State	78	6	..	.	329
Park Ridge, 12,063—Cook							
Park Ridge Convalescent Home	Conv	Part	17	17	..	.	16
Peoria, 105,087—Peoria							
Florence Crittenton Home	Mat	NPAssn	70	40	4	55	62
Pontiac, 9,585—Livingston							
Illinois State Penitentiary Hospital	Inst	State	40	20	.		
Quincy, 40,469—Adams							
Quincy Memorial Sanitarium	Conv	NPAssn	20	. No data supplied			
[illegible] ome	Orth	NPAssn	30	16	..	..	152
[illegible] ool for Boys	Inst	State	21	11	..	..	829
Urbana, 14,064—Champaign							
McKinley Memorial Hospital	Inst	State	155	25	.	.	1,589
Wedron, 202—La Salle							
St Joseph's Health Resort	Conv	Church	70	61			1,409
Wheaton, 7,389—Du Page							
Mary E Pogue School	MeDe	Indiv	78	71			29
Wheeling, 550—Cook							
Addolorata Villa Health Resort for Women	Conv	Church	42	29		.	

INDIANA

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Anderson, 41,572—Madison							
Hoppes Lying In Hospital	Mat	Corp	12	5	9	192	252
St. John's Hickey Memorial Hospital▲○	Gen	Church	250	192	40	1,190	4,299
Angola, 3,141—Steuben							
Cameron Hospitals	Gen	NPAssn	20	14	5	116	579
Argos, 1,190—Marshall							
Kelly Hospital	Gen	NPAssn	10	8	4	61	271
Auburn, 5,415—De Kalb							
Dr. Bonnell M Souder Hosp	Gen	Indiv	30	15	7	209	517
[illegible] tal	Gen	Church	75	53	24	319	1,314
[illegible] al	Gen	County	60	47	8	514	2,740
[illegible]	Gen	Church	150	90	50	1,506	4,918
[illegible] 00,570—Monroe							
[illegible]	Gen	NPAssn	40	44	10	459	2,211
[illegible]	Gen	Corp	42	27	8	100	2,063
Wells County Hospital	Gen	County	25	21	6	201	574
[illegible] spital	Gen	County	50	46	11	523	1,201
[illegible]	Gen	County	75	47	20	506	2,252
[illegible]	Gen	NPAssn	44	[illegible]	15	465	1,512
[illegible] ▲	Gen	County	85	61	18	419	2,953
Crown Point, 4,64—Lake							
James O Parramore Hosp ▲	TB	County	234	206	..	.	142
Decatur, 5,861—Adams							
Adams County Memorial Hospital	Gen	County	47	29	13	[illegible]	2,321
Dyer, 970—Lake							
Mount Mercy Sanitarium	N&M	Church	75	68	..	..	279

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INDIANA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
East Chicago, 54,637—Lake							
St. Catherine's Hospital★▲○..	Gen	Church	264	191	60	1,289	8,102
Elkhart, 33,434—Elkhart							
Elkhart General Hospital▲...	Gen	NPAssn	75	61	24	855	3,042
Elwood, 10,913—Madison							
Mercy Hospital	Gen	Church	45	29	15	477	1,526
Evansville, 97,062—Vanderburgh							
Boehne Tuberculosis Hosp.+▲	TB	County	130	132	..	...	293
Clearview	N&M	Part	30	20	..	...	243
Evansville State Hospital....	Ment	State	1,200	538	..	...	915
Protestant Deaconess Hosp.▲○	Gen	Church	225	188	50	1,558	9,166
St. Mary's Hospital+▲○......	Gen	Church	169	149	21	635	4,522
U. S. Marine Hospital▲.......	Gen	USPHS	95	40	..	...	909
Welborn Memorial Baptist Hospital▲○	Gen	Church	100	85	16	553	3,860
Fort Wayne, 118,410—Allen							
Irene Byron Sanatorium......	TB	StateCo	254	216	..	...	471
Lutheran Hospital★▲○	Gen	Church	187	175	47	1,259	5,290
Methodist Hospital▲○	Gen	Church	100	86	25	664	2,689
St. Joseph Hospital★+▲○.....	Gen	Church	290	235	60	1,416	6,950
Frankfort, 13,706—Clinton							
Clinton County Hospital.....	Gen	County	40	32	12	406	1,482
Garrett, 4,285—De Kalb							
Sacred Heart Hospital........	Gen	Church	42	33	12	209	863
Gary, 111,719—Lake							
Methodist Hospital★▲○	Gen	Church	206	155	71	1,471	6,439
Patients' Hospital	Gen	Indiv	40	20	6	52	452
St. John Hospital............	Gen	NPAssn	25	1	4	50	341
St. Mary's Mercy Hosp.★▲◆..	Gen	Church	220	157	72	1,503	6,816
Greencastle, 4,872—Putnam							
Putnam County Hospital..:.	Gen	County	45	30	15	290	1,308
Greensburg, 6,065—Decatur							
Decatur County Memorial Hospital	Gen	County	40	32	10	242	1,138
Hammond, 70,184—Lake							
Mount Mercy Sanitarium.:...	N&M	Church	35	25	..	...	228
St. Margaret Hospital★+▲○..	Gen	Church	236	194	50	2,041	8,622
Hartford City, 6,946—Blackford							
Blackford County Hospital...	Gen	County	22	15	7	214	536
Huntingburg, 3,816—Dubois							
Stork Hospital	Gen	Part	12	11	6	257	616
Huntington, 13,903—Huntington							
Huntington County Hospital.	Gen	County	46	34	18	506	1,318
Indianapolis, 386,972—Marion							
Central State Hospital+▲.....	Ment	State	2,292	2,251	..	...	524
Emhardt Memorial Hospital.	Gen	NPAssn	36	23	12	283	1,224
Flower Mission Memorial Hospital	Unit of Indianapolis City Hospital						
Indianapolis City Hosp.★+▲○	GenTb	City	700	541	39	891	10,231
Indiana University Medical Center★+▲○	Gen	State	584	514	62	1,454	9,505
James Whitcomb Riley Hospital for Children.............	Unit of Indiana University Medical Center						
Kiwanis Home	Unit of Indiana University Medical Center						
Methodist Hospital★+▲○	Gen	Church	606	551	90	3,359	20,292
"Norways" Sterne Memorial Hospital	N&M	NPAssn	32	29	..	...	217
Public Health Center.........	Ven	City	147	75	..	...	1,545
Robert W. Long Hospital....	Unit of Indiana University Medical Center						
Rotary Convalescent Home..	Unit of Indiana University Medical Center						
St. Vincent's Hospital★▲○....	Gen	Church	322	279	55	1,769	10,589
Sunnyside Sanatorium+▲⊙ ...	TB	County	248	208	..	...	143
Veterans Admin. Center▲.....	Gen	Vet	345	271	..	...	3,073
William H. Coleman Hospital for Women	Unit of Indiana University Medical Center						
Jeffersonville, 11,493—Clark							
Clark County Memorial Hospital▲	Gen	County	85	49	20	508	2,057
Kendallville, 5,431—Noble							
McCray Memorial Hospital...	Gen	City	32	26	12	317	1,014
Kokomo, 33,795—Howard							
St. Joseph Memorial Hosp.○	Gen	Church	81	87	26	975	2,999
La Fayette, 28,798—Tippecanoe							
La Fayette Home Hosp.+▲○..	Gen	NPAssn	145	95	25	603	3,982
St. Elizabeth Hospital★▲○....	Gen	Church	285	194	44	918	6,503
William Ross Sanatorium.....	TB	County	27	20	..	...	39
La Porte, 16,180—La Porte							
Fairview Hospital	Gen	NPAssn	72	50	21	434	2,096
Holy Family Hospital........	Gen	Church	111	99	20	508	3,614
Lebanon, 6,529—Boone							
Witham Memorial Hospital...	Gen	County	70	39	22	470	1,494
Linton, 6,263—Greene							
Freeman Greene County Hosp.	Gen	County	30	26	8	337	1,378
Logansport, 20,177—Cass							
Cass County Hospital▲......	Gen	County	70	51	15	333	2,284
Logansport State Hosp.+▲⊙..	Ment	State	2,395	2,526	..	...	377
St. Joseph Hospital▲.........	Gen	Church	60	45	12	361	1,538
Madison, 6,923—Jefferson							
Kings Daughters Hospital....	Gen	NPAssn	50	24	12	282	1,189
Marion, 26,767—Grant							
Marion General Hospital▲....	Gen	NPAssn	80	64	20	896	4,358
Veterans Admin. Hospital. ..	See Veterans Administration Hosp. Ind.						
Martinsville, 5,009—Morgan							
Morgan County Memorial Hospital	Gen	County	30	14	10	274	1,091
Michigan City, 26,476—La Porte							
Clinic Hospital▲	Gen	Corp	50	40	12	70	2,206
Indiana Hospital for Insane Criminals	Ment	State	312	220	..	...	60
Indiana State Prison Hospital	Inst	State	180	60	..	...	1,670
St. Anthony's Hospital▲......	Gen	Church	100	52	26	552	2,506
Warren Hospital	Gen	Corp	22	10	..	...	750
Mishawaka, 29,298—St. Joseph							
St. Joseph Hospital▲○........	Gen	Church	100	74	25	606	2,714
Mooresville, 1,979—Morgan							
Comer's Sanitarium	Proct	Indiv	15	13	..	...	204
Muncie, 49,720—Delaware							
Ball Memorial Hospital★+▲○.	Gen	NPAssn	217	194	30	1,623	6,890
New Albany, 25,414—Floyd							
St. Edward Hospital▲.........	Gen	Church	114	77	26	825	3,401
"Silvercrest" Southern Indiana Tuberculosis Hospital	TB	State	152	119	..	...	150
New Castle, 16,620—Henry							
Clinic Hospital	Gen	*Part*	19	3	4	253	1,267
Henry County Hospital▲.....	Gen	County	82	57	18	686	4,431
North Madison, 316—Jefferson							
Madison State Hospital......	Ment	State	1,580	1,686	..	...	378
Peru, 12,432—Miami							
Dukes-Miami County Memorial Hospital	Gen	County	60	54	15	471	1,768
Wabash Railroad Employees Hospital▲	Indus	NPAssn	50	26	..	...	459
Plymouth, 5,713—Marshall							
Parkview Hospital	Gen	County	33	26	12	365	1,183
Portland, 6,362—Jay							
Jay County Hospital.........	Gen	County	63	46	10	388	1,678
Princeton, 7,786—Gibson							
Gibson General Hospital......	Gen	NPAssn	41	31	15	410	1,353
Rensselaer, 3,214—Jasper							
Jasper County Hospital......	Gen	County	42	37	10	408	1,720
Richmond, 35,147—Wayne							
Reid Memorial Hospital▲○....	Gen	NPAssn	130	115	26	1,100	5,735
Richmond State Hospital.....	Ment	State	1,732	1,752	..	...	318
Smith-Esteb Memorial Hosp..	TB	County	50	42	..	...	64
Rockville, 2,208—Parke							
Indiana State Sanatorium....	TB	State	250	184	..	...	235
Rome City, 504—Noble							
Kneipp Springs Sanatorium:.	Gen	Church	150	...	..	...	1,034
Rushville, 5,960—Rush							
Rushville City Hospital.......	Gen	City	12	9	7	256	525
Seymour, 8,620—Jackson							
Schneck Memorial Hospital...	Gen	County	62	40	18	482	2,126
Shelbyville, 10,791—Shelby							
W. S. Major Hospital........	Gen	City	48	37	10	388	2,100
South Bend, 101,268—St. Joseph							
Healthwin Hospital▲	TB	County	185	152	..	...	222
Memorial Hospital★+▲○	Gen	NPAssn	230	187	45	1,395	9,180
St. Joseph's Hospital★▲○.....	Gen	*Church*	181	138	42	1,210	5,951
Sullivan, 5,077—Sullivan							
Mary Sherman Memorial Hospital▲	Gen	County	50	41	12	380	1,699
Tell City, 5,395—Perry							
Parkview Hospital	Gen	Indiv	12	4	3	45	654
Terre Haute, 62,693—Vigo							
Hoover's Sanatorium	Gen	Indiv	14	0	2	58	2,100
St. Anthony's Hospital★▲○...	Gen	Church	176	138	30	822	4,192
Union Hospital▲○	Gen	NPAssn	189	152	27	836	5,092
U. S. Penitentiary Hospital...	Inst	USPHS	100	22	..	...	643
Union City, 3,535—Randolph							
Union City Hospital..........	Gen	Part	12	10	3	128	653
Valparaiso, 8,736—Porter							
Porter Memorial Hospital▲...	Gen	County	57	48	18	510	1,832
Veterans Administration Hospital, 507—Grant							
Veterans Admin. Hospital▲...	Ment	Vet	2,093	1,746	..	...	976
Vincennes, 18,228—Knox							
Good Samaritan Hospital○...	Gen	County	109	77	20	898	3,471
Hillcrest Tuberculosis Hosp...	TB	County	65	34	..	...	95
Wabash, 9,653—Wabash							
Wabash County Hospital.....	Gen	County	45	34	10	381	1,099
Warsaw, 6,378—Kosciusko							
McDonald Hospital	Gen	*Indiv*	38	32	10	312	1,318
Murphy Medical Center.......	Gen	Indiv	25	13	10	153	541
Washington, 9,312—Daviess							
Daviess County Hospital.....	Gen	County	93	72	15	541	2,795
Williamsport, 1,222—Warren							
Community Hospital	Gen	NPAssn	20	10	6	151	531
Winchester, 5,303—Randolph							
Randolph County Hospital...	Gen	County	37	30	10	310	1,211
Wolflake, 250—Noble							
Luckey Hospital	Gen	Indiv	20	8	6	173	487

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Anderson, 41,572—Madison							
Citizens Nursing Center.......	Gen	Part	13	8	4	165	568
Ella B. Kehrer Hospital.......	TB	County	45	12	..	..	18
Butlerville, 266—Jennings							
Muscatatuck State School...:	MeDe	State	1,320	1,309	..	.	510
Fort Wayne, 118,410—Allen							
Fort Wayne State School....	MeDe	State	1,912	1,912	..	...	126
Grace Convalescent Hospital.	Conv	Indiv	33	22	.	.	60
Medical Center Hospital......	Gen	Indiv	25	9	3	8	472
Greencastle, 4,872—Putnam							
Indiana State Farm Hosp....	Inst	State	31	12	..	..	534
Greensburg, 6,065—Decatur							
Odd Fellows Home Hospital..	Inst	NPAssn	47	45	..	...	47
Hammond, 70,184—Lake							
Kuhn Clinic Hospital.........	ENT	Indiv	15	4	..	..	1,634
Indianapolis, 386,972—Marion							
Suemma Coleman Home......	Mat	NPAssn	20	14	20	50	65
La Fayette, 28,798—Tippecanoe							
Indiana State Soldiers' Home Hospital	Inst	State	112	55	..	...	342
Lagrange, 1,814—Lagrange							
Lagrange County Hospital...	Gen	County	14	12	..	...	116

Key to symbols and abbreviations is on page 1091

INDIANA—Continued

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Martinsville, 5,009—Morgan							
Home Lawn Mineral Springs.	Conv	Corp	162	109	..	...	3,989
Martinsville Sanitarium	Conv	Corp	120	88	..	...	3,185
New Castle, 16,620—Henry							
Indiana Village for Epileptics	Epil	State	1,035	1,008	..	...	87
Pendleton, 1,681—Madison							
Indiana State Reformatory Hospital	Inst	State	86	2	..	...	719
Plainfield, 1,811—Hendricks							
Indiana Boys School Hospital	Inst	State	27	1	..	...	270
Wilkinson, 336—Hancock							
Dr. Charles Titus Hospital...	ENT	Indiv	7	2	..	...	325

IOWA

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Akron, 1,314—Plymouth							
Akron Hospital	Gen	Indiv	14	5	3	101	250
Algona, 4,954—Kossuth							
Kossuth Hospital	Gen	Indiv	28	15	10	252	679
Alta, 1,269—Buena Vista							
Alta Community Hospital....	Gen	NPAssn	12	8	6	27	232
Ames, 12,555—Story							
Iowa State College Hospital▲	Inst	State	75	5	..	...	380
Anamosa, 4,069—Jones							
Mercy Hospital	Gen	Church	35	19	10	192	693
Atlantic, 5,802—Cass							
Atlantic Hospital	Gen	NPAssn	50	35	12	200	1,801
Battle Creek, 827—Ida							
Battle Creek Hospital........	Gen	Part	18	9	8	85	336
Belmond, 2,109—Wright							
Steele Memorial Hospital.....	Gen	Part	12	7	7	70	369
Buffalo Center, 911—Winnebago							
Dolmago Hospital	Gen	Part	13	8	8	140	315
Burlington, 25,832—Des Moines							
Burlington Protestant Hospital▲○	Gen	NPAssn	105	91	20	332	3,009
Mercy Hospital▲○	Gen	Church	100	77	25	390	2,704
St. Francis Hospital..........	Gen	Church	65	45	15	177	1,493
Carroll, 5,380—Carroll							
St. Anthony Hospital▲○......	Gen	Church	122	97	35	710	3,764
Cedar Falls, 9,349—Black Hawk							
Sartori Memorial Hospital▲..	Gen	City	39	28	10	249	923
Cedar Rapids, 62,120—Linn							
Mercy Hospital★▲○	Gen	Church	137	129	32	750	5,262
St. Luke's Methodist Hospital+▲○	Gen	Church	162	157	29	919	6,024
Centerville, 8,413—Appanoose							
St. Joseph's Mercy Hospital▲.	Gen	Church	45	37	12	378	1,895
Chariton, 5,754—Lucas							
Yocom Hospital	Gen	Indiv	21	3	7	144	689
Charles City, 8,681—Floyd							
Cedar Valley Hospital........	Gen	City	60	53	20	423	2,348
Cherokee, 7,469—Cherokee							
Cherokee State Hospital......	Ment	State	1,755	1,692	..	...	310
Sioux Valley Hospital▲.......	Gen	NPAssn	35	28	12	292	1,778
Clarinda, 4,905—Page							
Clarinda Municipal Hospital.	Gen	City	44	33	13	251	1,518
Clarinda State Hospital......	Ment	State	1,579	1,593	..	...	367
Clarion, 2,971—Wright							
Clarion General Hospital and Clinic	Gen	Part	17	9	10	115	325
Clinton, 26,270—Clinton							
Jane Lamb Memorial Hosp.▲○	Gen	NPAssn	100	69	16	362	3,021
St. Joseph Mercy Hospital▲○.	Gen	Church	92	76	24	305	1,774
Colfax, 2,252—Jasper							
Colfax Sanitarium	Gen	Corp	18	11	1	23	280
Council Bluffs, 41,439—Pottawattamie							
Jennie Edmundson Memorial Hospital★▲○	Gen	NPAssn	137	102	20	726	4,199
Mercy Hospital★▲○	Gen	Church	151	129	21	470	4,165
St. Bernard's Hospital⊙......	N&M	Church	180	174	..	...	574
Cresco, 3,530—Howard							
St. Joseph Mercy Hospital...	Gen	Church	25	18	10	176	703
Davenport, 66,039—Scott							
Mercy Hospital▲○	Gen	Church	225	164	50	1,192	6,613
Pine Knoll Sanatorium.......	TB	County	75	35	..	...	60
St. Elizabeth's and St. John's Hospitals	Units of Mercy Hospital						
St. Luke's Hospital▲○.........	Gen	Church	92	95	22	681	3,177
Winneshiek							
ital▲..	Gen	Church	37	30	12	308	1,260
......	Gen	Indiv	15	7	7	53	463
Des Moines, 159,819—Polk							
Broadlawns Polk County Hospital★▲○	Gen	County	147	103	20	183	3,842
Broadlawns Polk County Hospital	Iso	County	59	12	..	...	280
Broadlawns Polk County Hospital▲	TB	County	87	51	..	...	63
Iowa Lutheran Hospital★▲○..	Gen	Church	135	129	20	568	4,304
Iowa Methodist Hospital★+▲○	Gen	Church	290	217	40	1,226	9,772
Mercy Hospital★▲○	Gen	Church	163	169	30	1,102	6,101
Raymond Blank Memorial Hospital for Children+......	Unit of Iowa Methodist Hospital						
The Retreat	N&M	Corp	50	37	..	...	131
Veterans Admin. Hospital▲...	Gen	Vet	503	355	..	...	3,802
Dexter, 760—Dallas							
Clinic Hospital	Gen	Part	17	20	6	86	656

IOWA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Dubuque, 43,892—Dubuque							
Finley Hospital▲○	Gen	NPAssn	108	72	20	478	3,399
St. Joseph Mercy Hospital▲○	Gen	Church	140	98	25	681	3,816
St. Joseph Sanitarium⊙......	N&M	Church	225	230	..	...	625
Sunny Crest Sanatorium▲....	TB	County	70	48	..	...	53
Emmetsburg, 3,374—Palo Alto							
Emmetsburg Hospital	Gen	NPAssn	28	19	10	210	1,119
Estherville, 5,651—Emmet							
Holy Family Hospital........	Gen	Church	40	24	12	295	1,195
Forest City, 2,545—Winnebago							
Forest City Municipal Hosp..	Gen	City	20	9	8	89	375
Fort Des Moines, —Polk							
Station Hospital▲	Gen	Army	73	59	4	35	1,161
Fort Dodge, 22,904—Webster							
Lutheran Hospital▲	Gen	Church	120	111	25	756	4,567
St. Joseph Mercy Hospital▲○	Gen	Church	112	89	20	518	3,728
Fort Madison, 14,063—Lee							
Atchison, Topeka and Santa Fe Railway Employees' Hosp..	Indus	NPAssn	40	17	..	...	483
Sacred Heart Hospital.......	Gen	Church	60	45	18	449	2,394
Grinnell, 5,210—Poweshiek							
Community Hospital▲	Gen	NPAssn	40	22	13	127	826
St. Francis Hospital..........	Gen	Church	30	21	10	90	518
Hamburg, 2,187—Fremont							
Hamburg Hospital	Gen	Indiv	30	25	8	200	1,225
Hampton, 4,006—Franklin							
Lutheran Hospital	Gen	Church	45	29	13	290	1,134
Hartley, 1,503—O'Brien							
Hand Hospital	Gen	Indiv	12	5	5	109	369
Hull, 1,072—Sioux							
Hull Hospital	Gen	Corp	15	9	5	66	515
Ida Grove, 2,238—Ida							
Ida Grove General Hospital..	Gen	Part	15	6	6	68	252
Independence, 4,342—Buchanan							
Independence State Hospital..	Ment	State	1,857	1,780	..	...	434
Peoples Hospital	Gen	NPAssn	32	18	10	249	892
Iowa City, 17,182—Johnson							
Children's Hospital	Unit of University Hospitals						
Iowa State Psychopathic Hospital+	Ment	State	60	36	..	...	319
Mercy Hospital▲○	Gen	Church	114	98	24	576	3,265
University Hospitals★+▲○	Gen	State	900	636	54	632	16,818
Keokuk, 15,076—Lee							
Graham Hospital	Gen	NPAssn	63	55	15	226	1,001
St. Joseph's Hospital........	Gen	Church	140	105	21	375	3,108
Knoxville, 6,936—Marion							
Veterans Admin. Hospital▲..	Ment	Vet	1,910	1,575	..	...	530
Lake City, 2,216—Calhoun							
McCrary Hospital	Gen	Indiv	25	12	8	106	516
Le Mars, 5,353—Plymouth							
Sacred Heart Hospital▲......	Gen	Church	40	39	10	393	1,763
Leon, 2,307—Decatur							
Decatur County Hospital.....	Gen	County	22	21	5	217	906
Marshalltown, 19,240—Marshall							
Evangelical Deaconess Home and Hospital○	Gen	Church	150	130	20	435	3,551
St. Thomas Mercy Hospital○..	Gen	Church	85	76	15	295	1,507
Mason City, 27,080—Cerro Gordo							
Park Hospital▲	Gen	Corp	50	41	15	270	1,679
St. Joseph's Mercy Hosp.▲○..	Gen	Church	175	149	26	518	4,371
McGregor, 1,309—Clayton							
McGregor Hospital	Gen	Indiv	12	7	4	35	172
Monticello, 2,546—Jones							
John McDonald Hospital.....	Gen	NPAssn	35	15	10	200	1,000
Mount Pleasant, 4,610—Henry							
Mount Pleasant State Hosp..	Ment	State	1,622	1,585	..	...	330
Muscatine, 18,286—Muscatine							
Bellevue Hospital	Gen	NPAssn	45	34	12	233	1,475
Benjamin Hershey Memorial Hospital	Gen	NPAssn	50	39	14	286	1,328
New Hampton, 2,933—Chickasaw							
St. Joseph's Hospital▲.......	Gen	Church	62	37	12	238	1,439
Newton, 10,462—Jasper							
Mary Frances Skiff Memorial Hospital▲	Gen	City	52	38	10	326	1,220
Oakdale, —Johnson							
State Sanatorium+▲	TB	State	425	401	..	...	300
Oelwein, 7,801—Fayette							
Mercy Hospital	Gen	Church	35	32	15	342	1,330
Onawa, 3,438—Monona							
Onawa Hospital	Gen	Indiv	25	14	6	80	769
Osceola, 3,281—Clarke							
Harken Hospital	Gen	Indiv	26	20	5	56	653
Osceola Hospital	Gen	Indiv	30	16	7	132	699
Oskaloosa, 11,024—Mahaska							
Mercy Hospital	Gen	Part	30	20	8	115	832
21,570—Wapello							
....	Gen	NPAssn	53	58	12	264	1,829
....	Gen	Church	105	106	20	551	4,021
......	TB	County	20	18	..	...	...
Dispensary	Gen	Navy	128	33	..	...	1,643
Perry, 5,977—Dallas							
Kings Daughters Hospital....	Gen	NPAssn	20	10	6	150	601
Pleasantville, 895—Marion							
Community Hospital	Gen	Indiv	10	5	2	29	97
Red Oak, 5,763—Montgomery							
Murphy Memorial Hospital▲..	Gen	City	26	20	12	281	926
Rock Rapids, 2,556—Lyon							
Vander Wilt Hospital.........	Gen	Indiv	20	9	5	142	430
Sheldon, 3,763—O'Brien							
Good Samaritan Hospital....	Gen	Church	16	10	8	109	230

Key to symbols and abbreviations is on page 1091

IOWA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Shenandoah, 6,846—Page							
Henry and Catherine L. Hand Memorial Hospital	Gen	NPAssn	40	25	8	277	1,087
Sibley, 2,356—Osceola							
Osceola Hospital	Gen	Indiv	22	10	6	148	634
[illegible]							
[illegible]	Gen	Indiv	12	5	5	64	209
[illegible]							
Lutheran Hospital▲○	Gen	Church	90	75	15	366	2,669
Methodist Hospital▲○	Gen	Church	110	98	15	426	3,961
St. Joseph Mercy Hosp.★▲○	Gen	Church	250	215	50	1,669	8,327
St. Vincent's Hospital▲○	Gen	Church	130	110	16	538	6,032
Spencer, 6,599—Clay							
Spencer Municipal Hospital	Gen	City	25	19	9	261	935
Spirit Lake, 2,161—Dickinson							
Marcus Snyder Memorial Hospital	Gen	Part	17	8	6	98	465
Storm Lake, 5,274—Buena Vista							
Porath Hospital	Gen	Indiv	9	9	8	257	347
Vinton, 4,163—Benton							
Virginia Gay Hospital	Gen	City	25	23	10	187	762
[illegible]							
[illegible] ▲	Gen	County	54	29	12	279	1,169
[illegible]							
[illegible] ▲	Gen	NPAssn	86	64	25	751	3,183
Presbyterian Hospital	Gen	NPAssn	34	27	10	156	1,366
St. Francis Hospital▲	Gen	Church	116	92	20	587	3,680
Waverly, 4,156—Bremer							
St. Joseph Mercy Hospital▲	Gen	Church	50	23	10	235	880
West Union, 2,059—Fayette							
West Union Community Hospital	Gen	City	16	8	7	117	423
Williamsburg, 1,368—Iowa							
Miller Hospital	Gen	Indiv	8	...	4	Reopened	

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Anamosa, 4,069—Jones							
Men's Reformatory Hospital	Inst	State	158	108	..	...	318
Davenport, 66,039—Scott							
Isolation Hospital	Iso	County	24	...	..	Estab. 1945	
Des Moines, 159,819—Polk							
Junior League Convalescent Home for Children	Conv	NPAssn	18	14	..	...	70
Salvation Army Booth Memorial Hospital	Mat	Church	50	23	15	95	112
Eldora, 3,553—Hardin							
Iowa Training School for Boys Hospital	Inst	State	30	10	..	...	269
Glenwood, 4,501—Mills							
Glenwood State School	McDe	State	2,077	1,850	..	...	323
Harlan, 3,727—Shelby							
Harlan Hospital	Gen	Part	14	7	6	130	208
Marshalltown, 19,240—Marshall							
Iowa Soldiers' Home Hosp.	Inst	State	140	69	..	...	52
Orange City, 1,920—Sioux							
Doornink Hospital	Gen	Indiv	13	6	4	84	315
[illegible]							
[illegible]	Gen	City	15	12	6	96	360
[illegible]							
[illegible]	McDe	Indiv	55	17	..	...	60
Sioux City, 82,364—Woodbury							
Florence Crittenton Home	Mat	NPAssn	30	18	10	40	62
Toledo, 2,073—Tama							
State Juvenile Home Hosp.	Inst	State	30	5	..	...	200
Waukon, 2,972—Allamakee							
Rominger and Jeffries Emergency Hospital	ENT	Part	8	...	..	...	...
Woodward, 895—Dallas							
Hospital for Epileptics and School for Feebleminded	McDe	State	1,686	1,638	..	...	143

KANSAS

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Abilene, 5,671—Dickinson							
Dickinson County Memorial Hospital	Gen	NPAssn	36	23	14	202	1,142
Anthony, 2,873—Harper							
Galloway Hospital	Gen	Indiv	27	12	7	160	1,154
Arkansas City, 12,752—Cowley							
Mercy Hospital	Gen	NPAssn	34	30	15	234	1,095
Stricklen Hospital	Gen	NPAssn	28	6	5	36	321
Atchison, 12,648—Atchison							
Atchison Hospital	Gen	NPAssn	45	33	15	320	1,234
Axtell, 545—Marshall							
Axtell Hospital	Gen	Indiv	12	6	5	72	340
Belleville, 2,580—Republic							
Patterson Memorial Hospital	Gen	Indiv	22	15	6	114	529
Beloit, 3,765—Mitchell							
Community Hospital▲	Gen	NPAssn	52	26	11	225	1,329
Chanute, 10,142—Neosho							
Johnson Hospital	Gen	Corp	50	27	10	175	1,387
Coffeyville, 17,355—Montgomery							
Medical Center Hospital	Gen	NPAssn	18	16	8	250	...
Southeast Kansas Hospital○	Gen	NPAssn	20	20	5	210	1,124
Colby, 2,458—Thomas							
St. Thomas Hospital	Gen	Church	32	32	13	244	1,047
Columbus, 3,402—Cherokee							
Maude Norton Memorial City Hospital	Gen	City	23	21	7	146	661

KANSAS—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Concordia, 6,255—Cloud							
St. Joseph's Hospital▲○	Gen	Church	87	80	17	351	2,633
Dodge City, 8,487—Ford							
Charlotte Murray Memorial Hospital	Gen	Indiv	50	37	15	257	1,474
St. Anthony Hospital▲○	Gen	Church	70	51	22	497	2,738
El Dorado, 10,045—Butler							
Susan B. Allen Memorial Hospital▲○	Gen	NPAssn	60	43	14	370	1,938
Ellsworth, 2,227—Ellsworth							
Ellsworth Hospital○	Gen	Corp	45	36	9	99	1,170
Emporia, 13,188—Lyon							
Newman Memorial County Hospital▲○	Gen	County	85	69	20	370	2,151
St. Mary's Hospital	Gen	Church	75	35	16	232	1,094
Fort Leavenworth, 4,982—Leavenworth							
Station Hospital▲	Gen	Army	155	81	5	24	1,632
Station Hospital, U. S. Disciplinary Barracks	Gen	Army	180	...	..	...	...
Fort Riley, —Geary							
Regional Hospital▲	Gen	Army	181	106	8	108	2,429
Fort Scott, 10,577—Bourbon							
Mercy Hospital▲○	Gen	Church	120	96	18	865	2,974
Garden City, 6,285—Finney							
St. Catherine's Hospital▲○	Gen	Church	65	50	15	268	1,844
Gardner, 516—Johnson							
Reece Hospital	Gen	Indiv	15	8	7	89	...
Girard, 2,554—Crawford							
Girard General Hospital	Gen	City	22	13	4	74	451
Goessel, 300—Marion							
Mennonite Bethesda Hospital	Gen	NPAssn	15	8	6	78	330
Goodland, 3,306—Sherman							
Boothroy Memorial Hospital	Gen	Church	25	20	12	190	1,160
Great Bend, 9,044—Barton							
St. Rose Hospital▲○	Gen	Church	132	103	24	749	5,973
Halstead, 1,397—Harvey							
Halstead Hospital▲○	Gen	Church	160	143	8	81	4,025
Harper, 1,695—Harper							
Joslin Hospital	Gen	Indiv	10	6	4	49	206
Hays, 6,385—Ellis							
Hadley Memorial Hospital	Gen	Church	50	28	5	127	1,237
St. Anthony's Hospital▲	Gen	Church	110	87	25	572	4,119
Hillsboro, 1,580—Marion							
Salem Hospital	Gen	Church	25	15	10	112	634
Hoisington, 3,719—Barton							
Hoisington Hospital	Gen	NPAssn	15	7	4	49	340
Holton, 2,885—Jackson							
Holton Hospital	Gen	Part	15	11	7	147	410
Horton, 2,872—Brown							
Horton Hospital	Gen	Part	27	17	13	239	816
Hutchison, 30,013—Reno							
Grace Hospital▲○	Gen	Church	140	114	30	674	4,219
St. Elizabeth Mercy Hosp.▲○	Gen	Church	65	47	20	423	1,798
U. S. Naval Air Station Dispensary	Gen	Navy	110	44	..	...	52
Indep [illegible]							
Merc [illegible] ▲	Gen	Church	70	56	19	502	1,961
Iola, 7,244—Allen							
St. John's Hospital	Gen	Church	30	20	11	196	966
Junction City, 8,507—Geary							
Junction City Municipal Hospital	Gen	City	67	38	20	270	1,157
Kansas City, 121,458—Wyandotte							
Bell Memorial Hospital	Unit of University of Kansas Hospitals						
Bethany Hospital★▲○	Gen	Church	150	150	30	675	5,352
Douglass Hospital	Gen	Church	23	12	4	93	434
Providence Hospital★▲○	Gen	Church	90	90	25	735	3,198
St. Margaret's Hospital★▲○	Gen	Church	203	148	25	308	4,510
University of Kansas Hospitals★+▲○	Gen	State	370	303	30	684	8,247
Larned, 3,533—Pawnee							
Larned State Hospital	Ment	State	1,564	1,459	..	...	300
Lawrence, 14,390—Douglas							
Haskell Institute Hospital	Inst	IA	40	1	..	...	212
Lawrence Memorial Hospital	Gen	City	67	52	20	579	2,547
Sunflower Ordnance Works Hospital	Indus	NPAssn	18	5	..	...	1,941
Watkins Memorial Hospital▲	Inst	State	62	13	..	...	1,165
Leavenworth, 19,220—Leavenworth							
Cushing Memorial Hospital▲○	Gen	NPAssn	69	41	12	327	1,462
St. John's Hospital▲○	Gen	Church	65	49	10	225	1,209
U. S. Penitentiary Hospital▲	Inst	USPHS	215	75	..	...	1,428
Liberal, 4,410—Seward							
Epworth Hospital	Gen	Church	47	33	10	303	1,630
Little River, 603—Rice							
Hoffman Memorial Hospital	Gen	City	16	12	3	24	220
Lyons, 4,497—Rice							
Lyons Hospital	Gen	NPAssn	20	...	0	...	...
Manhattan, 11,659—Riley							
St. Mary Hospital▲○	Gen	Church	50	51	15	364	2,232
Marion, 2,086—Marion							
Marion Hospital	Gen	NPAssn	10	4	4	54	228
Marysville, 4,035—Marshall							
Marysville Hospital	Gen	Indiv	11	4	4	64	204
Randell Hospital	Gen	Indiv	16	6	6	75	311
McPherson, 7,194—McPherson							
McPherson County Hospital	Gen	County	60	38	16	246	1,368
Mulvane, 940—Sumner							
Atchison, Topeka and Santa Fe Railway Hospital▲	Indus	NPAssn	50	20	..	...	592
Neodesha, 3,376—Wilson							
Wilson County Hospital	Gen	County	30	20	6	109	759

Key to symbols and abbreviations is on page 1091

KANSAS—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census†	Bassinets	Number of Births	Admissions†
Newton, 11,048—Harvey							
Axtell Christian Hospital▲○	Gen	Church	45	35	12	115	1,211
Bethel Deaconess Hospital▲○	Gen	Church	78	62	14	277	2,281
Norton, 2,762—Norton							
Kenney Memorial Hospital	Unit of State Sanatorium for Tuberculosis						
Norton Hospital	Gen	City	21	18	10	210	800
State Sanatorium for Tuberculosis▲	TB	State	501	409	..	.	312
Norwich, 411—Kingman							
Wallace Hospital	Gen	Indiv	9	4		20	320
Oberlin, 1,878—Decatur							
Benton Memorial Hospital	Gen	Part	16	7	6	72	455
Olathe, 3,979—Johnson							
U S Naval Air Station Dispensary	Gen	Navy	185	50	4	56	3,293
Osawatomie, 4,145—Miami							
Osawatomie State Hospital	Ment	State	1,715	1,717	..	...	244
Ottawa, 10,193—Franklin							
Ransom Memorial Hospital	Gen	County	40	25	15	347	1,563
Parsons, 14,294—Labette							
Mercy Hospital▲○	Gen	Church	75	53	22	443	1,947
Missouri Kansas Texas Railroad Employes' Hospital	Indus	NPAssn	50	15	.	...	451
State Hospital for Epileptics	Epil	State	817	759	..	...	54
Pittsburg, 17,571—Crawford							
Mount Carmel Hospital▲○	Gen	Church	80	76	12	452	2,699
Pratt, 6,501—Pratt							
Ninnescah Hospital	Gen	Corp	30	16	10	248	1,200
Quinter, 481—Gove							
Quinter Community Hospital	Gen	Church	12	8	6	90	463
Russell, 4,819—Russell							
Russell City Hospital	Gen	City	24	17	12	201	720
Sabetha, 2,241—Nemaha							
St. Anthony Murdock Memorial Hospital▲○	Gen	Church	75	31	12	108	1,265
Salina, 21,073—Saline							
Asbury Protestant Hosp▲○	Gen	Church	80	57	20	452	2,201
St. John's Hospital▲○	Gen	Church	85	70	18	349	2,309
Seneca, 2,015—Nemaha							
Seneca Hospital	Gen	Church	23	17	12	106	647
Spearville, 603—Ford							
Perkins Hospital	Gen	NPAssn	10	..No data supplied			
Stafford, 2,011—Stafford							
Stafford City Hospital	Gen	City	28	20	6	116	803
[illegible]	Gen	NPAssn	23	19	6	80	1,008
[illegible] spital	Gen	County	20	17	6	89	382
Atchison, Topeka and Santa Fe Railway Hospital▲	Indus	NPAssn	140	98			3,119
Christ's Hospital▲○	Gen	Church	100	82	26	628	2,706
Jane C. Stormont Hospital▲○	Gen	NPAssn	80	71	30	638	2,387
Menninger Sanitarium+▲	N&M	Corp	60	43	.	..	126
St. Francis Hospital▲○	Gen	Church	100	87	22	608	2,676
Security Benefit Assn. Hosp	Gen	NPAssn	180	106	..	...	3,259
Topeka State Hospital	Ment	State	1,893	1,865	.	..	338
Veterans Admin Hospital▲	Ment	Vet	2,255	..		Estab	1946
Wadsworth, 2,300—Leavenworth							
Veterans Admin Hospital▲	Ment	Vet	2,064	568			4,034
Wamego, 1,767—Pottawatomie							
Genn Hospital	Gen	City	15	10	6	112	478
Wellington, 7,246—Sumner							
St. Luke's Hospital	Gen	NPAssn	30	15	8	227	809
Wichita, 114,966—Sedgwick							
Coffman Hospital	Gen	Corp	15	4	2	10	311
St. Francis Hospital★+▲○	Gen	Church	380	370	70	2,103	14,711
St. Joseph's Hospital	Gen	Church	106	63		.	2,301
Sedgwick County Hospital	Gen	County	54	41	3	23	691
Sedgwick County Tuberculosis Sanitarium	TB	County	40	19	..	...	12
Veterans Admin Hospital▲	Gen	Vet	252	177	..	...	2,170
Wesley Hospital★▲○	Gen	Church	325	313	54	1,584	10,334
Wichita Hospital★▲○	Gen	Church	132	129	25	640	3,487
Winfield, 9,506—Cowley							
St. Mary's Hospital▲○	Gen	Church	55	45	9	205	1,467
William Newton Memorial Hospital▲○	Gen	City	50	55	10	343	2,172

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census†	Bassinets	Number of Births	Admissions†
Ashland, 1,186—Clark							
Ashland Hospital	Gen	NPAssn	10	6	4	66	335
Fort Dodge, 550—Ford							
Kansas State Soldiers' Home Hospital	Inst	State	28	11	..	...	198
Lansing, 812—Leavenworth							
Kansas State Penitentiary Hospital	Inst	State	55	...	..	..	...
Manhattan, 11,659—Riley							
Kansas State College Hosp	Inst	State	60	3	..	...	312
St. Francis, 1,041—Cheyenne							
St. Francis Hospital	Gen	Indiv	16	...	6	Estab.	1945
Topeka, 67,833—Shawnee							
[illegible] Home	Mat	NPAssn	20	10	16	23	36
[illegible] and	Mat	Church	30	12	30	62	71
Suburban Rest Sanitarium	N&M	Part	40	20	..	...	58
Winfield, 9,506—Cowley							
State Training School	MeDe	State	1,2[illegible]0	1,267	..	..	93

KENTUCKY

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census†	Bassinets	Number of Births	Admissions†
Albany, 1,259—Clinton							
Maple Hill Hospital	Gen	Indiv	13	5	5	78	[illegible]
Anchorage, 609—Jefferson							
Pleasant Grove Hospital	N&M	Indiv	55	50	..	...	151
Ashland, 29,537—Boyd							
Federal Correctional *Institution*	*Inst*	*USPHS*	31	25	.	...	576
Kings Daughters Hospital	Gen	NPAssn	105	72	20	820	3,214
Berea, 2,176—Madison							
Berea College Hospital▲○	GenIso	NPAssn	118	[illegible]	8	162	1,915
Beverly, 306—Bell							
Red Bird Evangelical Hosp	Gen	Church	11	5	4	45	163
Bowling Green, 14,585—Warren							
City Hospital	Gen	City	47	25	10	312	1,978
Corbin, 7,893—Whitley							
Smith Hospital	Gen	Indiv	32	20	9	168	1,012
Covington, 62,018—Kenton							
Covington Kenton County Tuberculosis Sanatorium	TB	*County*	*16*	*16*	..	...	12
St Elizabeth Hospital★▲○	Gen	Church	312	211	67	1,223	7,540
Wm. Booth Memorial Hosp▲	Gen	Church	103	[illegible]	22	919	3,361
Cynthiana, 4,840—Harrison							
Harrison Memorial Hospital	*Gen*	*NPAssn*	*35*	*20*	*10*	...	..
Danville, 6,734—Boyle							
Ephraim McDowell Memorial Hospital	Gen	NPAssn	76	60	22	416	3,238
Dayton, 8,379—Campbell							
Speers Memorial Hospital▲○	Gen	County	100	86	15	570	3,892
Fort Knox, —Hardin							
Regional Hospital▲	Gen	Army	259	140	5	42	3,279
Frankfort, 11,492—Franklin							
Kings Daughters Hospital	Gen	NPAssn	75	49	16	325	1,609
Frenchburg, 289—Menifee							
Jane Cook Hospital	Gen	Church	17	10	9	68	354
Fulton, 3,308—Fulton							
Fulton Hospital	Gen	Part	11	9	2	63	516
Georgetown, 4,420—Scott							
John Graves Ford Memorial Hospital	Gen	CyCo	28	11	8	136	724
Glasgow, 5,815—Barren							
T. J. Samson Community Hospital▲	Gen	NPAssn	*80*	*65*	12	429	*4,506*
Grayson, 1,176—Carter							
J. Q. Stovall Memorial Hosp.	Gen	Corp	20	18	8	183	805
Greenville, 2,347—Muhlenberg							
Muhlenberg Community Hosp	Gen	NPAssn	38	34	0	313	2,231
Harlan, 5,122—Harlan							
Harlan Hospital	Gen	Corp	*75*	*45*	*10*	*221*	*2,016*
Harrodsburg, 4,673—Mercer							
A D. Price Memorial Hosp	Gen	NPAssn	20	12	10	175	603
Hartford, 1,385—Ohio							
Crowder Clinic	Gen	Indiv	8	7	5	*145*	*402*
Hazard, 7,397—Perry							
Hazard Hospital	Gen	Corp	80	*43*	*12*	*108*	*3,057*
Hurst Snyder Hospital	Gen	Corp	25	9	6	103	1,059
Hopkinsville, 11,724—Christian							
Jennie Stuart Memorial Hosp.	Gen	NPAssn	64	61	10	252	2,528
Western State Hospital	Ment	State	1,500	2,012		..	575
Hyden, 500—Leslie							
Frontier Nursing Service Hospital	Gen	NPAssn	18	10	0	140	331
Jenkins, 9,428—Letcher							
Jenkins Hospital▲	Gen	NPAssn	65	22	4	32	658
La Grange, 1,334—Oldham							
Mallory Taylor Memorial Hospital	Gen	City	24	20	5	64	301
Lakeland, 55—Jefferson							
Central State Hospital	Ment	State	2,391	2,097	..	.	691
Lebanon, 3,786—Marion							
Mary Immaculate Infirmary	Gen	Church	30	13	8	[illegible]	1,118
Lexington, 49,304—Fayette							
Eastern State Hospital	Ment	State	2,113	2,002	.		623
Good Samaritan Hosp★▲○	Gen	Church	265	270	27	762	10,085
Julius Marks Sanatorium▲	TB	County	115	111			160
St. Joseph Hospital★+▲○	Gen	Church	251	169	27	709	7,454
Shriners Hospital for Crippled Children▲	Orth	NPAssn	25	20		.	73
U. S. Public Health Service Hospital+▲	DrugMent	USPHS	1,410	1,100		.	1,868
Veterans Admin Hospital▲	Ment	Vet	859	637	..	.	765
London, 2,263—Laurel							
Pennington General Hospital	Gen	Indiv	25	7		...	212
[illegible]	Gen	Indiv	16	2	5	75	[illegible]
[illegible] ▲○	Chil	NPAssn	70	53		..	1,716
[illegible]	Gen	NPAssn	85	75	15	421	3,479
[illegible] ★▲○	Gen	Church	169	145	[illegible]	1,031	5,288
[illegible] nter	Ven	State	145	62	.	..	2,331
[illegible] ▲	Orth	NPAssn	100	91	.	.	672
[illegible] ▲		CyCo	578	550	60	1,046	11,121
[illegible] ▲		Church	85	70	12	230	2,762
[illegible] ▲		NPAssn	144	[illegible]	[illegible]	968	5,207
[illegible]		NPAssn	61	24	6	116	614
[illegible] ▲		Church	145	123	31	1,075	4,470
[illegible] ▲		Church	[illegible]	302	25	1,553	[illegible]
[illegible] Hospital★▲○	Gen	Church	160	[illegible]	60	[illegible]	[illegible]
State Tuberculosis Sanatorium (Hazelwood)	TB	State	103	102		.	114
Stokes Sanitarium	N&M	Indiv	40	21		.	171
U S. Marine Hospital▲	Gen	USPHS	164	112		.	2,011

Key to symbols and abbreviations is on page 1091

KENTUCKY—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Lynch, 10,000—Harlan							
Lynch Hospital	Gen	NPAssn	55	19	8	181	1,262
Madisonville, 8,209—Hopkins							
Hopkins County Hospital	Gen	NPAssn	69	28	6	255	2,918
Marion, 2,163—Crittenden							
Crittenden County Hospital	Gen	NPAssn	27	14	8	73	596
Mayfield, 8,619—Graves							
Fuller-Gilliam Hospital	Gen	Corp	31	23	8	214	1,384
Mayfield Hospital	Gen	NPAssn	45	21	5	107	742
Maysville, 6,572—Mason							
Hayswood Hospital	Gen	NPAssn	65	48	14	348	3,133
Middlesboro, 11,777—Bell							
Middlesboro Hospital	Gen	Corp	50	30	10	100	2,014
Morganfield, 3,079—Union							
Our Lady of Mercy Hospital	Gen	Church	25	...	6	Estab. 1945	
Murray, 3,773—Calloway							
Keys-Houston Clinic Hospital	Gen	Part	25	22	8	171	1,102
Wm. Mason Memorial Hosp.	Gen	NPAssn	65	25	5	91	915
Oneida, 300—Clay							
Oneida Maternity Hospital	Mat	State	25	26	20	407	565
Outwood, 50—Christian							
Veterans Admin. Hospital▲	TB	Vet	372	342	..	...	852
Owensboro, 30,245—Daviess							
Owensboro-Daviess County Hospital▲○	Gen	CyCo	100	81	17	888	4,118
Paducah, 33,765—McCracken							
Ewart Purcell Isolation Hosp.	*Unit of Riverside Hospital*						
Illinois Central Hospital▲	Indus	NPAssn	75	46	..	...	2,853
Riverside Hospital▲	Gen	City	114	79	28	745	3,843
Paintsville, 2,324—Johnson							
Paintsville Clinic	Gen	Indiv	20	5	5	82	451
Paintsville Hospital	Gen	Corp	65	40	5	300	2,148
Paris, 6,697—Bourbon							
W. W. Massie Memorial Hospital▲	Gen	City	50	23	5	143	789
Pewee Valley, 625—Oldham							
Pewee Valley Sanitarium and Hospital	Gen	NPAssn	50	20	4	59	294
Pikeville, 4,185—Pike							
Methodist Hospital	Gen	Church	90	65	14	451	4,565
Pineville, 3,882—Bell							
Pineville Community Hospital	Gen	Corp	64	55	11	184	2,805
Richmond, 7,335—Madison							
Gibson Hospital	Gen	Indiv	31	25	8	70	680
Irvine-McDowell Memorial Trachoma Hospital▲	Trach	State	38	23	..	...	168
Pattie A. Clay Infirmary	Gen	NPAssn	55	30	10	219	2,431
Riverside, 25—Warren							
Warren County Tuberculosis Hospital	TB	County	28	20	..	...	61
Shelbyville, 4,392—Shelby							
Kings Daughters Hospital	Gen	NPAssn	38	37	12	210	1,330
Stanford, 1,940—Lincoln							
Stanford Hospital	Gen	Indiv	15	11	5	105	447
Versailles, 2,548—Woodford							
Woodford County Memorial Hospital	Gen	NPAssn	32	17	7	153	929
Waverly Hills, 250—Jefferson							
Waverly Hills Sanatorium▲	TB	CyCo	600	451	..	...	464
Winchester, 8,594—Clark							
Clark County Hospital	Gen	NPAssn	50	33	8	120	980
Guerrant Memorial Hospital	Gen	NPAssn	25	15	4	16	225

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Fleming, 1,193—Letcher							
Fleming Hospital	Gen	Indiv	25	8	3	38	464
Frankfort, 11,492—Franklin							
Kentucky Training Home	McDe	State	769	740	..	...	59
La Grange, 1,334—Oldham							
State Reformatory Hospital	Inst	State	139	..No data supplied			
Louisville, 319,077—Jefferson							
King's Daughters Home for Incurables	Incur	NPAssn	100	95	..	...	17
Susan Speed Davis Home and Hospital	Mat	Church	33	29	20	66	93

LOUISIANA

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Abbeville, 6,672—Vermilion							
Abbeville Clinic	Gen	Indiv	21	6	5	223	837
Alexandria, 27,066—Rapides							
Baptist Hospital▲○	Gen	Church	191	126	37	918	8,599
Culpepper-White Clinic	Gen	Part	8	4	4	108	257
Murrell Hospital-Clinic	Gen	Indiv	14	10	6	159	730
Texada Clinic	Gen	Part	11	8	5	220	635
Veterans Admin. Hospital▲	Gen	Vet	725	459	..	...	4,265
Bastrop, 6,626—Morehouse							
Bastrop General Hospital	Gen	Church	24	25	5	155	1,381
Baton Rouge, 34,719—East Baton Rouge							
Baton Rouge General Hosp.○	Gen	NPAssn	55	52	18	531	3,071
Our Lady of the Lake Sanitarium▲○	Gen	Church	160	177	44	1,510	11,918
Bogalusa, 14,604—Washington							
Elizabeth Sullivan Memorial Hospital▲○	Gen	NPAssn	116	74	20	373	4,321
Breaux Bridge, 1,608—St. Martin							
St. Paul Hospital	Gen	Indiv	10	5	3	109	312
Carville, 250—Iberville							
U. S. Marine Hospital▲	Lepro	USPHS	338	377	..	...	64
Converse, 314—Sabine							
Allen Sanitarium	Gen	Corp	15	9	6	75	740
Covington, 4,123—St. Tammany							
Fenwick Sanitarium	N&M	Indiv	30	24	..	...	291
Crowley, 9,523—Acadia							
Acadia Hospital	Gen	Part	12	8	5	119	668
Legion Memorial Hospital	Gen	NPAssn	22	5	14	185	090
Delhi, 1,192—Richland							
Delhi Clinic and Sanitarium	Gen	Part	15	8	12	277	643
De Ridder, 3,750—Beauregard							
Frazar Clinic and Hospital	Gen	Indiv	25	18	7	300	1,475
Donaldsonville, 3,889—Ascension							
Donaldsonville General Hosp.	Gen	Indiv	9	4	4	82	279
Ferriday, 2,857—Concordia							
Ferriday Hospital	Gen	Part	27	13	5	107	996
Greenwell Springs, 130—East Baton Rouge							
Greenwell Springs Tuberculosis Hospital	TB	State	223	90	..	...	136
Haynesville, 2,418—Claiborne							
Haynesville Hospital▲	Gen	Corp	32	12	8	70	684
Hodge, 1,445—Jackson							
Hodge Clinic	Gen	NPAssn	15	2	3	70	600
Houma, 9,052—Terrebonne							
Ellender Memorial Hospital	Gen	Part	23	18	8	613	1,865
U. S. Naval Air Station Dispensary	Gen	Navy	25	...	..	...	...
Independence, 1,408—Tangipahoa							
Florida Parishes Charity Hospital	Gen	State	70	51	11	544	2,752
Jackson, 5,384—East Feliciana							
East Louisiana State Hosp.	Mént	State	4,450	4,262	..	...	918
Parker Hospital▲	Unit of East Louisiana State Hospital						
Lafayette, 19,210—Lafayette							
Lafayette Charity Hospital▲	Gen	State	255	104	18	757	4,364
Lafayette Sanitarium	Gen	NPAssn	25	15	8	166	1,163
St. Ann Infirmary	Gen	Indiv	12	8	8	132	778
Lake Charles, 21,207—Calcasieu							
St. Patrick's Hospital▲	Gen	Church	90	63	34	1,133	5,412
Lecompte, 1,311—Rapides							
Lecompte Sanitarium	Gen	Indiv	14	7	4	120	850
Mansfield, 4,065—De Soto							
Mansfield Sanitarium	Gen	Corp	32	11	4	73	907
Many, 1,474—Sabine							
Fraser Sanitarium	Gen	Indiv	18	8	8	216	814
Marksville, 1,811—Avoyelles							
Marksville Hospital	Gen	Indiv	16	9	3	138	587
Minden, 6,677—Webster							
Minden Sanitarium	Gen	Corp	45	35	10	387	2,600
Monroe, 28,309—Ouachita							
E. A. Conway Memorial Hospital+	Gen	State	160	123	16	432	5,639
G. B. Cooley Sanatorium	TB	NPAssn	40	38	..	...	36
Monroe Charity Hospital	See E. A. Conway Memorial Hospital						
Riverside Sanitarium▲	Gen	Indiv	25	18	8	89	1,082
St. Francis Sanitarium▲○	Gen	Church	125	120	20	925	6,332
Vaughan-Wright-Bendel Clinic▲	Gen	Part	36	35	11	156	1,488
New Iberia, 13,747—Iberia							
Dauterive Hospital	Gen	Part	26	14	6	193	1,491
Iberia General Hospital	Gen	Indiv	16	5	4	81	633
New Orleans, 494,537—Orleans							
Charity Hospital of Louisiana★+▲○	Gen	State	3,353	1,889	197	4,834	31,317
City Hospital for Mental Diseases	Ment	City	100	37	..	...	378
Delgado Memorial Hospital	Unit of Charity Hospital						
De Paul Sanitarium▲	N&M	Church	200	216	..	...	690
Eye, Ear, Nose and Throat Hospital+▲	ENT	NPAssn	85	57	..	...	6,788
Flint Goodridge Hospital of Dillard University★▲○	Gen	NPAssn	100	85	20	559	3,102
French Hospital	Gen	NPAssn	62	40	13	340	2,242
Hotel Dieu, Sisters' Hosp.★+▲○	Gen	Church	280	265	45	2,187	11,329
Illinois Central Hospital▲	Indus	NPAssn	60	29	..	...	853
John Dibert Memorial Tuberculosis Hospital	Unit of Charity Hospital						
Mercy Hospital—Soniat Memorial★▲○	Gen	Church	125	100	32	1,006	5,182
New Orleans Hospital and Dispensary for Women and Children▲	Gen	NPAssn	64	37	23	629	2,583
Richard Milliken Memorial Hospital	Unit of Charity Hospital						
Southern Baptist Hosp.★+▲○	Gen	Church	374	359	70	2,682	22,886
Touro Infirmary★+▲○	Gen	NPAssn	283	213	41	1,568	13,797
U. S. Marine Hospital★+▲	Gen	USPHS	658	437	14	89	6,029
U. S. Naval Air Station Dispensary	Gen	Navy	25	...	..	...	...
U. S. Naval Hospital★+▲	Gen	Navy	1,293	1,014	..	...	10,161
Opelousas, 8,980—St. Landry							
St. Landry Clinic	Gen	NPAssn	24	6	6	106	...
Pineville, 4,297—Rapides							
Central Louisiana State Hosp.	Ment	State	2,400	2,350	..	...	891
Fuqua Memorial Hospital▲	Unit of Central Louisiana State Hospital						
Huey P. Long Charity Hosp.▲	Gen	State	253	138	22	745	5,187
Plaquemine, 5,049—Iberville							
Plaquemine Sanitarium	Gen	NPAssn	35	23	9	251	2,003
Port Sulphur, 550—Plaquemines							
Port Surphur Hospital	Gen	NPAssn	10	5	4	63	235
Ruston, 7,107—Lincoln							
Ruston-Lincoln Sanitarium	Gen	NPAssn	47	24	9	235	1,451

LOUISIANA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Shreveport, 98,167—Caddo							
Gilmer Chest Hospital........	TB	Indiv	32	28	..	...	137
Gowen Sanatorium	TB	Corp	30	25	..	...	147
Highland Sanitarium★▲○	Gen	Part	89	75	18	22	3,317
North Louisiana Sanit.★▲○...	Gen	Corp	116	87	16	299	4,816
Pines Sanatorium	TB	NPAssn	116	No data supplied			
Regional Hospital+▲	Gen	Army	160	127	8	66	2,599
T. E. Schumpert Memorial Sanitarium★▲○	Gen	Church	100	85	27	947	4,415
Shreveport Charity Hospital★+▲○	Gen	State	613	368	41	1,735	10,320
Shriners Hospital for Crippled Children+▲	Orth	NPAssn	60	38	..	...	105
Tri-State Hospital★▲○	Gen	Corp	120	108	22	538	5,084
Tallulah, 5,712—Madison							
Madison Sanitarium	Gen	Indiv	14	7	2	63	490
Thibodaux, 5,851—La Fourche							
St. Joseph Hospital..........	Gen	NPAssn	35	18	6	294	1,591

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Alexandria, 27,066—Rapides							
State Colony and Training School	MeDe	State	930	641	..	...	76
Angola, 18—West Feliciana							
Angola General Hospital.....	Inst	State	110	63	..	...	1,069
Morgan City, 6,969—St. Mary							
Morgan City General Hosp...	Gen	NPAssn	24	8	7	232	662
New Orleans, 494,537—Orleans							
New Orleans Convalescent Home	Conv	NPAssn	33	9	..	...	129

MAINE

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Augusta, 19,360—Kennebec							
Augusta General Hospital▲○..	Gen	NPAssn	75	50	20	558	2,967
Augusta State Hospital......	Ment	State	1,550	1,495	..	...	260
Bangor, 29,822—Penobscot							
Bangor Sanatorium	TB	NPAssn	30	17	..	...	17
Bangor State Hospital⊙......	Ment	State	1,122	1,122	..	...	283
Eastern Maine General Hospital★▲○	Gen	NPAssn	213	198	30	571	6,111
Paine Private Hospital.......	Gen	Indiv	30	22	..	...	600
Stinson Private Hospital.....	Gen	Indiv	21	17	12	191	620
Bar Harbor, 4,378—Hancock							
Mount Desert Island Hosp.▲..	Gen	NPAssn	58	16	10	121	552
Bath, 10,235—Sagadahoc							
Bath Memorial Hospital○....	Gen	NPAssn	100	49	25	286	1,287
Belfast, 5,540—Waldo							
Bradbury Memorial Hospital.	Gen	NPAssn	15	7	5	8	109
Waldo County General Hospital▲○	Gen	NPAssn	35	26	10	105	545
....	Gen	Part	48	52	10	251	1,332
....	Gen	NPAssn	54	58	15	338	1,086
spital..	Gen	NPAssn	25	9	6	30	236
Boothbay Harbor, 2,121—Lincoln							
St. Andrews Hospital▲........	Gen	Corp	25	14	4	72	465
..	Gen	Indiv	54	26	12	224	1,108
.	Gen	Indiv	16	8	10	54	350
Dispensary	Gen	Navy	90	27	..	...	1,014
Camden, 3,554—Knox							
Camden Community Hospital	Gen	NPAssn	18	15	5	84	455
Cape Cottage, 1,025—Cumberland							
Station Hospital▲	Gen	Army	54	42	..	...	842
al▲....	Gen	City	40	20	10	257	912
Castine,							
Hospital.	Gen	NPAssn	12	9	6	104	409
......	Gen	NPAssn	25	16	7	135	603
Dexter, 3,714—Penobscot							
Plummer Memorial Hospital..	Gen	NPAssn	20	9	7	113	345
Dover-Foxcroft, 4,015—Piscataquis							
Mayo Memorial Hospital.....	Gen	City	21	13	7	144	562
....	Gen	NPAssn	11	9	5	122	350
▲..	TB	State	208	172	..	...	234
....	Gen	NPAssn	49	21	10	196	855
Fort Fairfield, 5,607—Aroostook							
Fort Fairfield Clinic..........	Gen	NPAssn	20	13	10	103	602
Gardiner, 6,044—Kennebec							
Gardiner General Hospital▲..	Gen	NPAssn	54	29	16	304	1,154
Greenville Junction, 600—Piscataquis							
Charles A. Dean Memorial Hospital	Gen	NPAssn	27	..No data supplied			
Greenwood Mountain, 250—Oxford							
Western Maine Sanatorium+▲	TB	State	150	106	..	...	183
Houlton, 7,771—Aroostook							
Aroostook General Hospital○	Gen	NPAssn	40	31	12	43	1,217
Madigan Memorial Hospital○	Gen	Church	44	38	13	160	2,500
Island Falls, 1,370—Aroostook							
Emma V. Milliken Memorial Hospital	Gen	NPAssn	20	9	6	75	297

MAINE—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Lewiston, 38,598—Androscoggin							
Central Maine General Hospital★▲○	Gen	NPAssn	225	171	35	808	4,434
St. Mary's General Hosp.★▲○	Gen	Church	156	134	25	571	3,741
Milo, 3,000—Piscataquis							
McNaughton Hospital	Gen	Indiv	16	..No data supplied			
Old Town, 7,688—Penobscot							
Home Private Hospital.......	Gen	Corp	16	..No data supplied			
Portland, 73,643—Cumberland							
Children's Hospital▲⊙	Chil	NPAssn	100	70	..	...	395
Farrington Hospital	Gen	City	150	92	16	10	1,001
Maine Eye and Ear Infirmary▲○	Gen	NPAssn	100	112	30	612	4,309
Maine General Hospital★+▲○..	Gen	NPAssn	330	294	55	1,210	8,414
Mercy Hospital▲○	Gen	Church	156	158	36	851	3,914
U. S. Marine Hospital▲.......	Gen	USPHS	90	64	..	...	1,278
Presque Isle, 7,939—Aroostook							
Northern Maine Sanatorium..	TB	State	118	90	..	...	103
Presque Isle General Hospital.	Gen	NPAssn	50	51	10	321	1,728
Rockland, 8,899—Knox							
Knox County General Hosp...	Gen	NPAssn	65	37	12	181	1,452
Rumford, 10,230—Oxford							
Rumford Community Hosp.▲○	Gen	NPAssn	63	48	12	337	2,345
Sanford, 14,886—York							
Henrietta D. Goodall Hosp.▲	Gen	NPAssn	42	39	8	290	1,609
Skowhegan, 7,159—Somerset							
Redington Memorial Hospital	Gen	NPAssn	27	22	8	155	911
Togus, 2,350—Kennebec							
Veterans Admin. Hospital▲...	Ment	Vet	1,102	582	..	...	2,965
Waterville, 16,688—Kennebec							
Sisters' Hospital▲○	Gen	Church	130	85	20	451	3,684
Thayer Hospital▲	Gen	NPAssn	38	28	5	168	1,243
Westbrook, 11,087—Cumberland							
Westbrook Hospital	Gen	Corp	22	12	10	200	468

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Bangor, 29,822—Penobscot							
Gay Private Hospital........	N&M	Indiv	19	19	..	...	138
Eagle Lake, 1,891—Aroostook							
Northern Maine General Hosp.	Gen	Church	49	34	5	57	901
Pownal, 575—Cumberland							
Pownal State School........	MeDe	State	1,126	1,079	..	...	34
Union, 1,150—Knox							
Jones Sanitarium	N&M	Corp	30	18	..	...	10
Van Buren, 5,390—Aroostook							
Hotel Dieu Hospital.........	Gen	Church	15	11	5	115	482
Yarmouth, 2,214—Cumberland							
Gilbert Maternity Home......	Mat	Indiv	16	14	6	32	35
York Village, 1,500—York							
York Hospital	Gen	NPAssn	22	9	6	102	501

MARYLAND

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Aberdeen Proving Ground, —Harford							
Station Hospital	Gen	Army	12	3	..	...	192
Annapolis, 13,069—Anne Arundel							
Annapolis Emergency Hosp.▲	Gen	NPAssn	85	50	15	229	1,556
U. S. Naval Hospital★+▲......	Gen	Navy	327	230	16	385	3,943
Bainbridge, —Cecil							
U. S. Naval Hospital★▲.......	Gen	Navy	2,296	2,505	10	114	30,005
Baltimore, 859,100—Baltimore City							
Baltimore City Hospitals★+▲○	GenTb	City	1,325	810	80	1,167	5,035
Baltimore City Tuberculosis Hospital	Unit of Baltimore City Hospitals						
Baltimore Eye, Ear and Throat Ch ▲	ENT	NPAssn	66	48	..	...	3,960
Beck	Gen	Indiv	14	12	..	...	215
Bon ▲	Gen	Church	158	140	32	815	3,944
Child	Orth	NPAssn	120	97	..	...	416
Church Home and Hosp.★+▲○	Gen	Church	165	134	28	822	4,621
Franklin Square Hosp.★+▲○..	Gen	NPAssn	218	100	52	1,019	4,114
Gundry Sanitarium	N&M	Indiv	45	36	..	...	14
Hospital for Women★+▲○....	Gen	NPAssn	124	92	28	1,137	3,581
James Lawrence Kernan Hospital and Industrial School for Crippled Children+▲....	Orth	NPAssn	103	67	..	...	197
Johns Hopkins Hospital★+▲○	Gen	NPAssn	962	781	75	1,945	19,951
Johnston Memorial Children's Hospital	Unit of Union Memorial Hospital						
Maryland General Hosp.★+▲○	Gen	Church	242	210	26	742	5,213
Mercy Hospital★+▲○	Gen	Church	292	240	50	1,276	7,552
Mount Hope Retreat⊙.........	N&M	Church	600	515	..	...	76
Phipps Psychiatric Clinic....	Unit of Johns Hopkins Hospital						
Presbyterian Eye, Ear and Throat Charity Hospital...	ENT	Church	40	6	..	...	1,249
Provident Hospital and Free Dispensary★+▲○	Gen	NPAssn	120	93	21	747	2,067
St. Agnes' Hospital★+▲○.....	Gen	Church	221	182	56	1,265	6,240
St. Joseph's Hospital★+▲○....	Gen	Church	253	203	37	1,116	6,920
Sinai Hospital★+▲○	Gen	NPAssn	300	243	46	1,727	7,261
South Baltimore General Hospital★+▲○	Gen	NPAssn	142	119	24	771	4,483
Sydenham Hospital+⊙	Iso	City	110	51	..	..	1,039
Union Memorial Hosp.★+▲○..	Gen	NPAssn	241	257	30	965	7,759
U. S. Marine Hospital★+▲....	Gen	USPHS	300	476	..	...	8,715
University Hospital★+▲○	Gen	State	435	293	70	2,141	10,179
West Baltimore General Hospital★+▲○	Gen	NPAssn	130	122	42	1,356	4,445

Key to symbols and abbreviations is on page 1091

MARYLAND—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census†	Bassinets	Number of Births	Admissions†
Bethesda, 30,000—Montgomery							
Suburban Hospital+▲	Gen	NPAssn	102	72	22	592	3,173
U. S. Naval Hospital (National Naval Medical Center)★+▲	Gen	Navy	2,428	2,241	7	11	19,296
Brunswick, 3,856—Frederick							
Schnauffer Hospital	Gen	Indiv	30	17	5	84	681
Cambridge, 10,102—Dorchester							
Cambridge-Maryland Hosp.▲○	Gen	NPAssn	75	31	15	279	1,243
Eastern Shore State Hospital	Ment	State	500	450	..	...	146
Catonsville, 7,647—Baltimore							
Haarlem Lodge	N&M	Indiv	60	60	..	...	281
Spring Grove State Hosp.+	Ment	State	2,186	2,164	..	...	574
Chestertown, 2,760—Kent							
Kent and Upper Queen Anne's General Hospital	Gen	NPAssn	30	20	12	182	974
Cheverly (Hyattsville P. O.), 996—Prince Georges							
Prince George's General Hosp.	Gen	County	116	55	20	425	2,405
Crisfield, 3,908—Somerset							
Edward W. McCready Memorial Hospital	Gen	County	38	20	6	110	608
Crownsville, 30—Anne Arundel							
Crownsville State Hospital	Ment	State	1,621	1,549	..	...	506
Hospital for Colored Feebleminded Children	Unit of Crownsville State Hospital						
Cumberland, 39,483—Allegany							
Allegany Hospital of the Sisters of Charity▲○	Gen	Church	131	93	36	556	3,485
Memorial Hospital▲○	Gen	CyCo	175	167	50	830	6,064
Easton, 4,528—Talbot							
Memorial Hospital▲○	Gen	NPAssn	125	79	16	303	2,837
Edgewood Arsenal,—Harford							
Station Hospital▲	Gen	Army	56	23	..	...	753
Elkton, 3,518—Cecil							
Union Hospital of Cecil County	Gen	NPAssn	73	34	30	365	1,852
Fort George D. Meade, —Anne Arundel							
Regional Hospital▲	Gen	Army	113	68	5	27	1,382
Fort Howard, 1,200—Baltimore							
Veterans Admin. Hospital▲	Gen	Vet	443	327	..	...	3,211
Fort Washington (Washington, D. C. P. O.), 415—Prince Georges							
Veterans Admin. Hospital▲	Gen	Vet	1,445	...	..	...	...
Frederick, 15,802—Frederick							
Emergency Hospital	Gen	County	50	35	10	194	550
Frederick City Hospital▲○	Gen	NPAssn	125	99	23	601	3,177
Frostburg, 7,659—Allegany							
Miners Hospital	Gen	State	48	30	13	273	1,406
Glenn Dale, 205—Prince Georges							
Tuberculosis Sanatorium	See Washington, D. O.						
Hagerstown, 32,491—Washington							
Washington County Hosp.▲○	Gen	NPAssn	158	142	48	[illegible]	4,981
Havre de Grace, 4,967—Harford							
Harford Memorial Hospital	Gen	NPAssn	75	41	25	595	2,640
Henryton, 30—Carroll							
Maryland Tuberculosis Sanat.	TB	State	495	362	..	...	396
Ijamsville, 200—Frederick							
Riggs Cottage Sanitarium	N&M	Indiv	28	20	..	...	31
La Plata, 488—Charles							
Physicians Memorial Hosp.	Gen	NPAssn	34	9	16	201	814
Laurel, 2,823—Prince Georges							
District Training School	See Washington, D. C.						
Laurel Sanitarium	N&M	Indiv	75	75	..	...	350
Warren Hospital	Gen	Part	16	7	10	137	388
Leonardtown, 668—St. Marys							
St. Mary's Hospital	Gen	NPAssn	45	21	11	228	956
Mount [illegible]							
Moun [illegible] lanc	TB	State	210	170	..	...	186
Olney, 100—Montgomery							
Montgomery County General Hospital	Gen	NPAssn	40	33	14	259	1,327
Patuxent River, —St. Marys							
U. S. Naval Air Station Dispensary	Gen	Navy	293	125	20	247	3,624
Perry Point, 80—Cecil							
Veterans Admin. Hospital▲	Ment	Vet	1,798	1,663	..	...	1,212
Prince Frederick, 300—Calvert							
Calvert County Hospital	Gen	NPAssn	26	11	9	153	553
Reisterstown, 2,000—Baltimore							
Mount Pleasant	TB	NPAssn	60	52	..	...	53
Relay, 2,016—Baltimore							
Relay Sanitarium	N&M	Part	35	26	..	...	167
Riverdale, 2,330—Prince Georges							
Eugene Leland Memorial Hospital	Gen	Corp	88	42	22	426	1,891
Rockville, 2,047—Montgomery							
Chestnut Lodge Sanitarium▲⊙	N&M	Indiv	50	47	..	...	77
Salisbury, 13,313—Wicomico							
Maryland Tuberculosis Sanatorium, Eastern Shore Branch	TB	State	78	42	..	...	73
Peninsula General Hospital▲○	Gen	NPAssn	147	130	30	819	5,049
Silver Springs, 28,000—Montgomery							
Cedarcroft Sanitarium	N&M	Part	46	30	..	...	352
State Sanatorium, 200—Frederick							
Maryland Tuberculosis Sanat.	TB	State	523	436	..	...	451
Sykesville, 806—Carroll							
Springfield State Hospital+	Ment	State	3,010	2,965	..	...	694
Takoma Park, 8,938—Montgomery							
Walter Reed General Hospital	See Washington, D. C.						
Washington Sanitarium and Hospital	See Washington, D. C.						
Towson, 2,074—Baltimore							
Aigburth Manor Hospital	Nerv	Indiv	25	23	..	...	53
Hospital for Consumptives (Eudowood Sanatorium)	TB	NPAssn	194	149	..	...	172
Sheppard and Enoch Pratt Hospital+▲⊙	N&M	NPAssn	285	206	..	...	136
Western Port, 3,565—Allegany							
Reeves Clinic	ENT	Part	22	4	..	...	349

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census†	Bassinets	Number of Births	Admissions†
Baltimore, 859,100—Baltimore City							
Baltimore City Jail Hospital	Inst	City	24	1	..	...	480
Happy Hills Convalescent Home for Children	Conv	NPAssn	80	56	..	...	153
Home for Incurables	Incur	NPAssn	152	129	..	...	24
Levindale Hebrew Home and Infirmary	Chr	NPAssn	182	170	..	...	52
Maryland Penitentiary Hosp.	Inst	State	50	..No data supplied			
Jessups, 400—Anne Arundel							
Maryland House of Correction Hospital	Inst	State	22	10	..	...	241
Owings Mills, 130—Baltimore							
Rosewood State Training School	MeDe	State	1,239	1,185	..	...	70
Rockville, 2,047—Montgomery							
Christ Child Farm for Convalescent Children	Conv	NPAssn	30	27	..	...	83

MASSACHUSETTS

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census†	Bassinets	Number of Births	Admissions†
Acushnet (New Bedford P. O.), —Bristol							
Acushnet Hospital	Gen	NPAssn	54	40	17	598	1,256
Adams, 12,608—Berkshire							
W. B. Plunkett Memorial Hospital▲	Gen	City	50	22	15	219	1,283
Amesbury, 10,862—Essex							
Amesbury Hospital▲	Gen	City	30	24	10	155	868
Arlington, 40,013—Middlesex							
Ring Sanatorium and Hosp.	N&M	Corp	60	48	..	...	336
Symmes Arlington Hospital▲○	Gen	NPAssn	80	53	20	289	1,027
Attleboro, 22,071—Bristol							
Bristol County Tuberculosis Hospital	TB	County	60	49	..	...	127
Sturdy Memorial Hospital▲○	Gen	NPAssn	118	71	32	764	2,590
Ayer, 3,572—Middlesex							
Community Memorial Hosp.▲	Gen	NPAssn	23	16	8	144	468
Baldwinsville, 2,200—Worcester							
Hospital Cottages for Children▲	Chil	NPAssn	125	67	..	...	6
Bedford, 3,807—Middlesex							
Veterans Admin. Hospital▲	Ment	Vet	1,616	1,665	..	...	884
Beverly, 25,537—Essex							
Beverly Hospital★+▲○	Gen	NPAssn	166	133	41	644	4,118
Boston, 770,816—Suffolk							
Adams House (Adams Nervine)	Nerv	NPAssn	35	22	..	...	90
Audubon Hospital	Gen	Corp	36	22	6	110	840
Beth Israel Hospital★+▲○	Gen	NPAssn	215	188	..	..	6,072
Boston City Hospital★+▲○	Gen	City	2,378	1,366	159	2,336	32,259
Boston Floating Hospital+▲⊙	Chil	NPAssn	56	39	..	...	1,135
Boston Lying-in Hospital+▲⊙	Mat	NPAssn	138	97	125	2,498	3,025
Boston Psychopathic Hospital+▲⊙	Ment	State	117	115	..	...	1,306
Boston Sanatorium+	TB	City	600	524	..	...	550
Boston State Hospital+▲⊙	Ment	State	2,253	2,675	..	...	1,150
Carney Hospital★+▲○	Gen	Church	228	194	34	721	5,622
Channing Home	TB	NPAssn	27	24	..	...	42
Children's Hospital★+▲○	Chil	NPAssn	288	233	24	...	6,789
Doctors Hospital	Gen	Corp	27	18	10	181	774
Evangeline Booth Maternity Hospital and Home+▲	Mat	Church	66	29	54	762	1,135
Faulkner Hospital★+▲○	Gen	NPAssn	135	110	25	670	3,310
Glenside Hospital	N&M	Corp	118	116	..	...	207
Harley Hospital	Gen	Corp	55	40	20	318	1,474
Haynes Memorial Hospital⊙	Unit of Massachusetts Memorial Hospitals						
House of the Good Samaritan+▲⊙	Card	NPAssn	83	48	..	...	134
Huntington Clinic	Maintained by Massachusetts Gen. Hosp.						
Infants' Hospital	Unit of Children's Hospital						
Jewish Memorial Hospital	GenChr	NPAssn	82	68	..	...	172
Joseph H. Pratt Diagnostic Hospital+▲	IntMed	NPAssn	52	39	..	...	3,224
Long Island Hospital+	GenChr	City	517	458	3	2	668
Massachusetts Eye and Ear Infirmary+▲⊙	ENT	NPAssn	227	132	..	...	6,050
Massachusetts General Hospital★+▲○	Gen	NPAssn	410	395	..	...	7,532
Massachusetts General Hospital, Baker Memorial▲	Gen	NPAssn	269	242	20	644	6,551
Massachusetts General Hospital, Phillips House▲	Gen	NPAssn	102	81	22	244	1,970
Massachusetts Memorial Hospitals★+▲○	Gen	NPAssn	418	259	41	1,024	7,973
Massachusetts Women's Hospital▲	Gen	NPAssn	47	32	22	272	1,159
New England Baptist Hosp.▲○	Gen	NPAssn	223	206	..	...	4,696
New England Deaconess Hospital+▲○	Gen	Church	303	286	..	...	7,[illegible]

MASSACHUSETTS—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
New England Hospital for Women and Children★+▲○	Gen	NPAssn	185	116	75	1,047	3,993
Palmer Memorial Hospital+	Unit of New England Deaconess Hospital						
Peter Bent Brigham Hospital★+▲○	Gen	NPAssn	250	192	..	...	4,474
Robert Breck Brigham Hosp.▲	Gen	NPAssn	103	77	..	...	748
Robert Dawson Evans Memorial+	*Unit of Massachusetts Memorial Hosps.*						
St. Elizabeth's Hospital★▲○	Gen	Church	256	200	62	1,477	6,335
St. Margaret's Hospital▲○	Gen	Church	89	59	37	1,205	3,117
St. Mary's Lying-In Hosp.▲	MatCh	Church	48	39	33	142	278
U. S. Marine Hospital★+▲	Gen	USPHS	463	383	..	...	7,304
Veterans Admin. Hospital▲	Gen	Vet	386	364	..	...	3,289
Bridgewater, 8,902—Plymouth							
Bridgewater State Hospital	See State Farm, Mass.						
Brockton, 62,343—Plymouth							
Brockton Hospital★▲○	Gen	NPAssn	121	78	25	548	2,676
Goodard Hospital▲	*Gen*	*Corp*	*65*	*54*	*25*	*677*	*2,294*
Moore Hospital	Gen	Indiv	25	13	8	275	606
Brookline, 49,786—Norfolk							
Allerton Hospital	Gen	Corp	60	64	20	437	2,353
Bellevue Hospital	Gen	NPAssn	30	20	5	99	1,000
Board of Health Hospital▲	*TbIso*	*City*	55	14	..	...	39
Bournewood Hospital	N&M	Indiv	24	16	..	...	10
Brooks Hospital▲	Gen	NPAssn	53	45	..	...	1,535
Corey Hill Hospital▲	Gen	Corp	50	30	..	...	1,132
Free Hospital for Women+▲	Gyn	NPAssn	101	65	..	...	2,500
Parkway Hospital	Unit of Free Hospital for Women						
Cambridge, 110,879—Middlesex							
Cambridge City Hosp.★▲○	Gen	City	300	184	100	1,506	6,053
Cambridge Hospital★+▲○	Gen	NPAssn	221	193	51	1,314	6,294
Cambridge Sanatorium	TB	City	100	83	..	...	258
Charlesgate Hospital	*Gen*	*Corp*	*85*	*65*	*10*	*328*	*2,862*
Chester Hospital	Gen	Corp	35	26	12	230	918
Canton, 6,381—Norfolk							
Massachusetts Hospital School	Orth	State	258	173	..	...	221
Chelsea, 41,259—Suffolk							
Captain John Adams Hospital at Soldiers' Home▲	Inst	State	211	200	..	...	2,299
Chelsea Memorial Hosp.★▲○	Gen	NPAssn	97	63	25	448	2,208
U. S. Naval Hospital★+▲	Gen	Navy	2,742	2,600	42	1,141	16,176
Clinton, 12,440—Worcester							
Clinton Hospital▲○	Gen	NPAssn	63	43	20	278	1,524
Concord, 7,972—Middlesex							
Emerson Hospital▲	Gen	NPAssn	37	25	18	310	1,127
Danvers, 14,179—Essex							
Danvers State Hospital	See Hathorne						
Hunt Memorial Hospital	Gen	City	20	10	6	87	516
Everett, 46,784—Middlesex							
Whidden Memorial Hosp.▲○	Gen	NPAssn	95	88	20	537	3,474
Fall River, 115,428—Bristol							
St. Anne's Hospital+▲○	Gen	Church	105	92	30	877	3,476
Truesdale Hospital+▲○	Gen	NPAssn	165	137	28	839	4,311
Union Hospital★○	Gen	NPAssn	165	123	36	871	4,272
Fitchburg, 41,824—Worcester							
Burbank Hospital★○	Gen	City	220	184	36	729	4,084
Lucy Helen Memorial Hosp.	Unit of Burbank Hospital						
Foxboro, 6,303—Norfolk							
Foxboro State Hospital+▲	Ment	State	1,364	1,291	..	...	248
▲○	Gen	NPAssn	112	81	30	651	3,362
▲ ..	*Ment*	*State*	*1,434*	*1,537*	..	...	*197*
Hospital▲○	Gen	NPAssn	112	96	19	131	2,828
Georgetown, 1,803—Essex							
Baldpate	N&M	Corp	45	37	..	...	212
Gloucester, 24,046—Essex							
Addison Gilbert Hospital▲○	Gen	NPAssn	85	65	15	398	2,081
Great Barrington, 5,824—Berkshire							
Fairview Hospital▲	Gen	NPAssn	51	28	12	162	836
Greenfield, 15,672—Franklin							
Franklin County Public Hospital▲○	Gen	NPAssn	107	99	23	518	2,512
Hanson, 2,570—Plymouth							
Plymouth County Hospital	TB	County	140	55	..	...	77
Hathorne, 140—Essex							
Danvers State Hospital+▲⊙	Ment	State	2,378	2,259	..	...	739
Haverhill, 46,752—Essex							
Benson Hospital	Gen	Indiv	32	24	17	184	801
Haverhill Municipal Hospital (Hale)▲	Gen	City	161	104	30	552	6,461
...	TB	County	60	47	..	...	40
Holden District Hospital▲	Gen	NPAssn	32	24	6	145	929
Holyoke, 53,750—Hampden							
Holyoke Hospital★▲○	Gen	*NPAssn*	*140*	*122*	*24*	*550*	*2,136*
Providence Hospital★▲○	Gen	Church	168	117	32	1,055	4,287
Hyannis, 1,800—Barnstable							
Cape Cod Hospital▲	Gen	NPAssn	65	40	15	373	1,561
Ipswich, 6,348—Essex							
Benjamin Stickney Cable Memorial Hospital▲	Gen	NPAssn	23	12	7	146	493
—Essex							
Iosp.	Gen	City	110	85	15	45	515
......	Gen	Corp	55	45	24	633	1,916
★▲○..	Gen	NPAssn	183	161	42	857	4,814
er	Gen	NPAssn	88	55	22	420	2,327

MASSACHUSETTS—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Lowell, 101,389—Middlesex							
Lowell General Hospital★▲○	*Gen*	*NPAssn*	*158*	*97*	*30*	*486*	*3,668*
St. John's Hospital★▲○	Gen	Church	175	157	25	578	4,703
St. Joseph's Hospital★▲○	Gen	Church	140	110	30	782	4,066
Shaw Hospital	Gen	Indiv	20	8	8	148	321
Ludlow, 8,181—Hampden							
Ludlow Hospital	*Gen*	*NPAssn*	*35*	*23*	*18*	*359*	*914*
Lynn, 98,123—Essex							
Lynn Hospital★▲○	Gen	NPAssn	212	161	74	1,505	6,743
Union Hospital	Gen	NPAssn	50	31	22	515	1,682
Malden, 58,010—Middlesex							
Malden Hospital+▲○	Gen	NPAssn	217	139	40	897	5,172
Marblehead, 10,856—Essex							
Mary A. Alley Emergency Hospital	Gen	City	18	9	10	48	309
Marlboro, 15,154—Middlesex							
Marlborough Hospital▲	*Gen*	*NPAssn*	*63*	*45*	*22*	*330*	*1,623*
Medfield, 4,384—Norfolk							
Medfield State Hospital+▲	Ment	State	1,543	1,769	..	...	322
Medford, 63,083—Middlesex							
Lawrence Memorial Hosp.▲○	Gen	NPAssn	76	62	31	936	2,696
Melrose, 25,333—Middlesex							
Melrose Hospital▲○	Gen	NPAssn	105	88	25	478	2,738
New England Sanitarium and Hospital▲○	Gen	Church	141	112	19	381	3,212
Methuen, 21,880—Essex							
Mary E. McGowan Memorial Hospital	*Gen*	Corp	28	20	9	375	910
Middleboro, 9,032—Plymouth							
Lakeville State Sanatorium▲	TB	State	302	157	..	...	130
St. Luke's Hospital▲	Gen	NPAssn	32	22	15	196	991
Middleton, 2,348—Essex							
Essex County Tuberculosis Hospital▲	TB	County	360	240	..	...	254
Milford, 15,388—Worcester							
Milford Hospital▲○	Gen	Corp	61	46	15	495	2,437
Milton, 18,708—Norfolk							
Milton Hospital and Convalescent Home▲	Gen	NPAssn	25	11	6	55	450
Montague City, 635—Franklin							
Farren Memorial Hospital▲	Gen	Church	74	46	12	147	1,439
Nantucket, 3,401—Nantucket							
Nantucket Cottage Hospital	Gen	NPAssn	29	10	5	51	512
Natick, 13,851—Middlesex							
Leonard Morse Hospital▲	Gen	City	58	38	17	332	1,417
Needham, 12,445—Norfolk							
Glover Memorial Hospital	Gen	City	23	16	10	153	725
New Bedford, 110,341—Bristol							
St. Luke's Hospital★▲○	Gen	NPAssn	291	160	45	1,410	7,602
Sassaquin Sanatorium▲	TB	NPAssn	124	101	..	...	99
Union Hospital	Gen	Corp	37	35	..	...	973
Newburyport, 13,916—Essex							
Anna Jaques Hospital▲	Gen	NPAssn	43	33	10	222	1,139
Worcester Memorial Hosp.▲	Gen	NPAssn	24	16	5	120	631
Newton, 69,873—Middlesex							
New England Peabody Home for Crippled Children▲	Orth	NPAssn	100	72	..	...	14
Newton-Wellesley Hosp.★+▲○	Gen	NPAssn	252	167	52	970	5,198
Norfolk, 2,294—Norfolk							
State Prison Colony Hosp.▲	Inst	State	75	35	.	...	431
North Adams, 22,213—Berkshire							
North Adams Hospital▲	Gen	NPAssn	91	41	19	408	1,532
Northampton, 24,791—Hampshire							
Cooley Dickinson Hospital▲○	Gen	NPAssn	136	123	21	792	3,856
Northampton State Hosp.+▲	Ment	State	1,768	2,128	..	...	690
Veterans Admin. Hospital▲	Ment	Vet	1,006	981	..	...	434
North Grafton, 1,150—Worcester							
Graf ▲	Ment	State	1,750	1,729	..	...	310
North							
Nort. ▲	*TB*	*State*	*297*	*121*	..	. .	*95*
Norwood, 15,383—Norfolk							
Norwood Hospital▲	Gen	NPAssn	130	119	30	691	3,551
Oak Bluffs, 1,584—Dukes							
Martha's Vineyard Hospital▲	Gen	NPAssn	32	17	10	93	534
Palmer, 9,149—Hampden							
Monson State Hospital+▲	Epil	State	1,663	1,463	..	.	139
Wing Memorial Hospital▲	Gen	NPAssn	33	26	12	131	1,400
Peabody, 21,711—Essex							
Josiah B. Thomas Hospital	Gen	City	65	41	15	280	1,429
Pittsfield, 49,684—Berkshire							
Hillcrest Hospital	Gen	NPAssn	42	37	10	135	1,191
House of Mercy Hospital★▲○	Gen	NPAssn	189	119	31	529	4,550
St. Luke's Hospital★▲○	Gen	Church	156	113	41	572	3,207
Plymouth, 13,100—Plymouth							
Jordan Hospital	Gen	NPAssn	75	37	10	265	1,657
Pocasset, 365—Barnstable							
Barnstable County Sanat.	TB	County	70	62	..	...	507
Quincy, 75,810—Norfolk							
Quincy City Hospital★+▲○	Gen	City	324	251	60	1,269	[illegible]
Rutland, 2,181—Worcester							
Jewish Tuberculosis Sanat.	TB	NPAssn	30	22	..	...	29
Rutland State Sanatorium+▲	TB	State	300	231	..	...	163
Rutland Heights, 800—Worcester							
Veterans Admin. Hospital▲	TB	Vet	457	429	..	...	778
Salem, 41,213—Essex							
North Shore Babies' Hosp.▲	Chil	NPAssn	50	25	..	...	576
Salem Hospital★+▲○	Gen	NPAssn	226	170	49	910	5,616
Sharon, 3,737—Norfolk							
Sharon Sanatorium	Chil	NPAssn	44	27	..	...	46
Somerville, 102,177—Middlesex							
Somerville Hospital▲○	Gen	NPAssn	121	91	50	731	3,476

Key to symbols and abbreviations is on page 1091

MASSACHUSETTS—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
South Braintree, —Norfolk							
Norfolk County Hospital+▲	TB	County	168	123	..	...	93
Southbridge, 16,825—Worcester							
Harrington Memorial Hosp.▲	Gen	NPAssn	40	24	19	352	1,047
South Dartmouth, 1,815—Bristol							
Sol-e-Mar Orthopedic Hospital for Children	Orth	NPAssn	40	34	..	...	24
Springfield, 149,554—Hampden							
Health Department Hospital▲	TbIso	City	100	38	..	...	439
Mercy Hospital★▲○	Gen	Church	315	260	60	1,605	9,584
Shriners Hospital for Crippled Children+▲⊙	Orth	NPAssn	60	43	..	...	244
Springfield Hospital★▲○	Gen	NPAssn	281	244	4	3	6,832
Wesson Maternity Hospital▲⊙	Mat	NPAssn	62	62	70	2,062	2,256
Wesson Memorial Hospital★▲	Gen	NPAssn	112	81	..	...	3,022
State Farm, 200—Plymouth							
Bridgewater State Hospital	Ment	State	962	875	..	...	110
Stockbridge, 1,815—Berkshire							
Austen Riggs Foundation	Nerv	NPAssn	50	21	..	...	166
Taunton, 37,395—Bristol							
Morton Hospital▲○	Gen	NPAssn	100	56	32	577	2,223
Taunton State Hospital+▲⊙	Ment	State	1,901	1,884	..	...	604
Tewksbury, 6,261—Middlesex							
Tewksbury State Hospital and Infirmary+▲	Gen	State	3,425	1,978	40	75	1,289
Vineyard Haven, 1,500—Dukes							
U. S. Marine Hospital▲	Gen	USPHS	24	13	..	...	244
Walpole, 7,443—Norfolk							
Pondville Hospital+▲	Cancer	State	40	36	..	...	641
Waltham, 40,020—Middlesex							
Metropolitan State Hosp.+▲⊙	Ment	State	1,589	1,981	..	...	509
Middlesex County Sanat.+▲	TB	County	380	250	..	...	246
Waltham Contagious Hosp.	Unit of Waltham Hospital						
Waltham Hospital★▲○	Gen	NPAssn	144	105	41	719	3,974
Ware, 7,557—Hampshire							
Mary Lane Hospital▲	Gen	NPAssn	48	30	18	355	1,395
Wareham, 6,364—Plymouth							
Tobey Hospital	Gen	NPAssn	40	28	16	405	1,228
Waverly, 6,000—Middlesex							
McLean Hospital+▲○	N&M	NPAssn	232	188	..	..	136
Webster, 13,186—Worcester							
Webster District Hospital▲	Gen	NPAssn	28	33	14	352	660
Wellesley, 15,127—Norfolk							
Channing Sanitarium	N&M	Corp	35	26	..	...	41
Wiswall Sanatorium	N&M	Indiv	30	25	..	...	26
Westboro, 6,463—Worcester							
Westboro State Hospital+▲○	Ment	State	1,799	1,738	..	...	424
Westfield, 18,793—Hampden							
Noble Hospital	Gen	NPAssn	85	40	15	361	2,162
Westfield State Sanatorium+▲	TB	State	239	150	..	...	574
Westwood, 3,376—Norfolk							
Westwood Lodge	N&M	Corp	21	18	..	...	54
Weymouth, 23,868—Norfolk							
South Shore Hospital▲	Gen	NPAssn	108	74	52	1,005	3,232
Whitinsville, 7,000—Worcester							
Whitinsville Hospital	Gen	NPAssn	18	14	12	196	661
Winchendon, 6,575—Worcester							
Millers River Hospital	Gen	NPAssn	25	22	10	179	825
Winchester, 15,081—Middlesex							
Winchester Hospital▲	Gen	NPAssn	72	61	20	715	2,289
Winthrop, 16,768—Suffolk							
Winthrop Community Hosp.▲	Gen	NPAssn	64	53	20	694	2,106
Woburn, 19,751—Middlesex							
Charles Choate Memorial Hospital▲○	Gen	NPAssn	53	37	23	395	1,904
Worcester, 193,694—Worcester							
Belmont Hospital+▲⊙	TbIso	City	250	124	..	...	752
Fairlawn Hospital▲	Gen	NPAssn	50	46	16	315	1,317
Harvard Private Hospital	Gen	Corp	25	11	5	31	370
Memorial Hospital★+▲○	Gen	NPAssn	185	171	30	953	7,155
St. Vincent Hospital★▲○	Gen	Church	242	225	33	671	6,248
Worcester City Hospital★+▲○	*Gen*	*City*	480	337	60	1,333	8,850
Worcester County Sanat▲	TB	County	130	81	..	...	94
Worcester Hahnemann Hospital★▲○	Gen	NPAssn	113	110	37	865	4,746
Worcester State Hospital+▲⊙	Ment	State	2,818	2,746	..	...	706

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Andover, 11,122—Essex							
Isham Infirmary	Inst	NPAssn	50	14	..	...	621
Belchertown, 3,503—Hampshire							
Belchertown State School▲	McDe	State	1,329	1,272	..	...	96
Boston, 770,816—Suffolk							
Bay State Hospital	Gen	Corp	20	..No data supplied			
Boston Home for Incurables	Incur	NPAssn	44	44	..	...	10
Deer Island Hospital, Suffolk County, House of Correction	Inst	CyCo	35	15	..	...	304
Florence Crittenton Home and Hospital	Mat	NPAssn	54	35	47	90	119
Prendergast Preventorium	TB	NPAssn	120	50	..	...	208
Talitha Cumi Home	Mat	NPAssn	36	28	17	85	139
Washingtonian Hospital	Drug	NPAssn	35	30	..	...	1,183
Cambridge, 110,879—Middlesex							
Holy Ghost Hospital for Incurables	Incur	Church	260	237	..	...	183
Framingham, 23,214—Middlesex							
Woodside Cottages	N&M	Corp	21	21	..	...	30
Greenfield, 15,672—Franklin							
Greenfield Isolation Hospital	TbIso	City	20	3	..	...	94

MASSACHUSETTS—Continued

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Haverhill, 46,752—Essex							
Haverhill City Infirmary	Chr	City	82	73	..	...	96
Lynn, 98,123—Essex							
Lynn Health Department Hospital	Iso	City	75	9	..	...	151
Pittsfield, 49,684—Berkshire							
Pittsfield Anti-Tuberculosis Hospital	TB	NPAssn	14	10	..	...	20
Quincy, 75,810—Norfolk							
Wellington Hospital Home	Conv	Corp	27	..No data supplied			
Salem, 41,213—Essex							
Health Department Hospital for Communicable Diseases	Iso	City	60	7	..	...	112
Somerville, 102,177—Middlesex							
Somerville Contagious Disease Hospital	Iso	City	38	15	..	...	377
Springfield, 149,554—Hampden							
Buscall Nursing Home	Conv	Indiv	25	11	..	...	18
City of Springfield Infirmary	Inst	City	116	108	..	...	242
Waltham, 40,020—Middlesex							
Walter E. Fernald State School	McDe	State	1,540	1,841	..	...	63
Wellesley, 15,127—Norfolk							
Convalescent Home for Children	Orth	NPAssn	75	50	..	...	278
Simpson Infirmary of Wellesley College	Inst	NPAssn	29	13	..	...	672
West Concord, 3,500—Middlesex							
Massachusetts Reformatory Hospital	Inst	State	50	5	..	...	1,020
Williamstown, 4,294—Berkshire							
Williams College Infirmary	Inst	NPAssn	28	3	..	...	299
Wrentham, 4,674—Norfolk							
Wrentham State School	McDe	State	2,075	1,869	..	...	154

MICHIGAN

Hospitals and Sanatoriums							
Adrian, 14,230—Lenawee							
Emma L. Bixby Hospital	Gen	City	60	37	25	640	1,880
Albion, 8,345—Calhoun							
James W. Sheldon Memorial Hospital▲	Gen	City	40	24	10	313	1,133
Allegan, 4,526—Allegan							
Allegan Health Center	Gen	NPAssn	40	26	13	278	1,340
Alma, 7,202—Gratiot							
Carney-Wilcox-Miller Hosp.	Gen	NPAssn	25	20	8	550	1,050
R. B. Smith Memorial Hosp.	Gen	NPAssn	29	18	11	308	1,148
Michigan Masonic Home and Hospital	Inst	NPAssn	45	34	..	...	188
Almont, 924—Lapeer							
Bishop Hospital	Gen	Indiv	14	10	5	133	495
Alpena, 12,808—Alpena							
Alpena General Hospital	Gen	City	75	52	15	542	2,264
Ann Arbor, 29,815—Washtenaw							
Mercywood Neuropsychiatric Hospital	N&M	Church	38	33	..	...	250
Michigan Rapid Treatment Center	Ven	State	100	80	..	...	2,000
St. Joseph's Mercy Hosp.★+▲○	Gen	Church	250	200	56	1,028	6,836
State Psychopathic Hospital	Unit of University Hospital						
University Hospital★+▲○	Gen	State	863	675	35	513	14,671
Bad Axe, 2,624—Huron							
Hubbard Memorial Hospital	Gen	NPAssn	34	25	10	257	985
Battle Creek, 43,453—Calhoun							
American Legion Hospital+	TB	NPAssn	350	175	..	...	305
Arthur S. Kimball Sanat.	TB	County	72	57	..	...	76
Battle Creek Sanitarium▲	Gen	NPAssn	307	190	..	...	3,338
Community Hospital▲○	Gen	NPAssn	100	83	25	920	4,725
Leila Y. Post Montgomery Hospital★▲○	Gen	Church	175	113	25	615	5,815
Bay City, 47,956—Bay							
Bay City General Hospital▲	Gen	City	110	83	25	995	3,530
Bay City Samaritan Hospital	Gen	NPAssn	40	29	4	1	1,328
Mercy Hospital★▲○	Gen	Church	137	97	25	569	4,719
Benton Harbor, 16,668—Berrien							
Mercy Hospital▲○	Gen	NPAssn	86	82	26	987	3,907
Berrien Center, 241—Berrien							
Berrien County Hospital	Gen	County	60	19	5	10	451
Big Rapids, 4,987—Mecosta							
Community Hospital	Gen	City	34	23	12	188	1,107
Brighton, 1,353—Livingston							
Mellus Memorial Hospital	Gen	NPAssn	13	9	6	88	317
Cadillac, 9,855—Wexford							
Mercy Hospital▲	Gen	Church	54	38	16	343	2,523
Calumet, 1,460—Houghton							
Calumet and Hecla Hospital	*Indus*	NPAssn	22	8	..	...	350
Caro, 3,070—Tuscola							
Caro Community Hospital	Gen	City	16	9	9	165	533
Caro State Hospital for Epileptics	Epil	State	1,470	1,762	..	...	83
Cass City, 1,362—Tuscola							
Pleasant Home Hospital	Gen	Indiv	16	11	5	165	590
Charlevoix, 2,299—Charlevoix							
Charlevoix Hospital	Gen	NPAssn	27	16	7	135	665
Charlotte, 5,544—Eaton							
Hayes-Green-Beach County Memorial Hospital	Gen	County	24	15	10	306	934

MICHIGAN—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Cheboygan, 5,673—Cheboygan							
Community Memorial Hosp.	Gen	NPAssn	44	26	12	241	1,218
Clare, 1,844—Clare							
Clare Hospital and Clinic	Gen	Part	25	10	6	62	323
Coldwater, 7,343—Branch							
Community Health Center	Gen	County	52	34	14	395	1,732
Crystal Falls, 2,641—Iron							
Crystal Falls Municipal Hospital	Gen	City	17	6	5	77	452
Cutlerville (Grand Rapids P. O.), 500—Kent							
Pine Rest Sanitarium	*Unit of Christian Psychopathic Hospital, Grand Rapids*						
Dearborn, 63,584—Wayne							
Dearborn Clinic and Diagnostic Hospital	Gen	NPAssn	65	10	20	90	536
Dearborn General Hospital	Gen	Indiv	15	7	14	382	487
Dearborn Industrial and General Hospital	Gen	NPAssn	40	28	20	407	1,510
St. Joseph's Retreat⊙	N&M	Church	350	341	..	...	1,072
Veterans Admin. Center▲	Gen	Vet	455	366	..	...	2,919
Detroit, 1,623,452—Wayne							
Alexander Blain Hospital+▲	*Gen*	*NPAssn*	*60*	*52*	*5*	*70*	*2,461*
Bethesda Hospital	TB	NPAssn	83	50	..	...	72
Charles Godwin Jennings Hospital★+▲	Gen	NPAssn	83	58	25	325	2,613
Children's Hospital+▲⊙	Chil	NPAssn	245	132	..	...	4,573
City of Detroit Receiving Hospital★+▲	Gen	City	635	549	12	22	17,220
City of Detroit Receiving Hospital (Redford Branch)▲	Gen	City	50	34	..	...	1,574
Delray General Hospital▲	Gen	NPAssn	72	46	22	556	2,516
Detroit Medical Hospital	N&M	NPAssn	100	60	..	...	771
Detroit Tuberculosis Sanat.▲	*TB*	*NPAssn*	*212*	*164*	..	...	*800*
East Side General Hospital▲	Gen	NPAssn	87	68	45	1,287	4,120
Edyth K. Thomas Memorial Hospital	Gen	NPAssn	136	13	17	172	581
Evangelical Deaconess Hospital★▲◇	Gen	Church	185	138	40	1,433	7,362
Fairview Sanatorium	TB	NPAssn	66	63	..	...	153
Florence Crittenton Hosp.+▲	Gen	NPAssn	301	195	107	1,654	4,300
Grace Hospital★+▲◇	*Gen*	*NPAssn*	*447*	*390*	*66*	*2,053*	*14,987*
Grace Hospital, Northwestern Branch▲	Gen	NPAssn	182	164	60	1,849	7,452
Harper Hospital★+▲◇	*Gen*	*NPAssn*	*600*	*426*	*85*	*2,278*	*19,343*
Henry Ford Hospital★+▲◇	Gen	NPAssn	560	530	55	1,538	16,544
Herman Kiefer Hosp.+▲⊙	TbMatIso	City	1,200	933	68	1,075	5,274
Kretzschmar Diagnostic Clinic and Hospital	Gen	NPAssn	12	7	4	78	416
Lincoln Hospital▲	Gen	NPAssn	56	48	20	606	2,351
Marr General Hospital	Gen	NPAssn	43	...	16	...	...
Martin Place Hospital	Gen	NPAssn	14	7	4	26	288
McGregor Convalescent Home	Conv	NPAssn	47	31	..	...	410
Mercy Hall Cancer Hospital	Cancer	NPAssn	65	40	..	...	300
Michigan Mutual Hospital▲	Indus	NPAssn	40	24	..	...	798
Miriam Memorial Hospital	*Unit of Grace Hospital*						
Mt. Carmel Mercy Hosp.★+▲◇	Gen	Church	456	336	100	3,539	15,636
North Detroit General Hosp.	Gen	NPAssn	44	31	16	423	1,995
Parkside Hospital+▲	Gen	NPAssn	52	37	12	481	1,361
Providence Hospital★+▲◇	Gen	Church	346	303	100	3,187	13,113
St. Joseph's Mercy Hosp.★▲◇	*Gen*	*Church*	225	139	60	1,702	7,618
St. Mary's Hospital★+▲◇	Gen	Church	315	224	60	1,742	10,256
Saratoga General Hospital+▲	Gen	NPAssn	110	80	30	1,116	4,530
Shurly Hospital+▲	Gen	Indiv	75	34	2	45	1,334
Station Hospital	Gen	Army	60	44	..	...	513
Trinity Hospital▲	Gen	NPAssn	100	62	20	848	4,239
U. S. Marine Hospital★+▲	Gen	USPHS	291	207	..	7	3,630
Warren Diagnostic Hospital	Gen	Indiv	18	11	3	26	541
Wayne Diagnostic *Hospital*	*Gen*	*NPAssn*	*108*	*75*	*30*	*700*	*1,260*
William Booth Memorial Hospital	Mat	Church	35	25	43	827	1,074
Woman's Hospital★+▲⊙	Gen	NPAssn	242	172	110	2,641	7,555
Dowagiac, 5,007—Cass							
Lee *Memorial Hospital*	Gen	Church	26	16	8	259	760
Durand, 3,127—Shiawassee							
Durand Hospital	Gen	NPAssn	14	11	5	158	450
East Grand Rapids (Reeds Lake P. O.), 4,899—Kent							
Burleson Hospital	Proct	Corp	20	20	..	...	700
Eaton Rapids, 3,060—Eaton							
Stimson Hospital	Gen	NPAssn	14	7	7	108	337
Edmore, 825—Montcalm							
Edmore Hospital	*Gen*	*Indiv*	*20*	*9*	*5*	*114*	*410*
Eloise, 1,700—Wayne							
Wayne County General Hospital and Infirmary +▲	Ment	County	3,892	4,101	..	...	850
★+▲	GenChr	County	6,308	2,536	..	8	5,125
William J. *Seymour Hosp.*★+▲	Unit of Wayne County General Hospital and Infirmary						
Escanaba, 14,830—Delta							
St. Francis *Hospital*	*Gen*	*Church*	*110*	*70*	*22*	*577*	*2,627*
Flint, 151,543—Genesee							
Hurley Hospital★+▲◇	Gen	City	425	325	59	2,011	15,092
St. Joseph Hospital★▲	Gen	Church	*230*	*154*	*45*	*1,670*	*6,253*
Women's Hospital▲	Gen	NPAssn	40	30	25	718	1,210
Fort Custer,—*Calhoun*							
Veterans Admin. Hospital▲	Ment	Vet	1,860	1,796	..	...	714
Fremont, 2,520—Newaygo							
Gerber Memorial Hospital	*Gen*	*City*	20	14	12	251	725
Gaylord, 2,055—Otsego							
Northern Michigan Tuberculosis Sanatorium▲	TB	State	112	107	..	...	93
Gladwin, 1,600—Gladwin							
Gladwin Hospital	Gen	*Indiv*	*12*	*6*	*4*	*165*	*341*
Goodrich, 470—Genesee							
Goodrich General Hospital▲	Gen	NPAssn	36	19	15	203	1,371
Grand Haven 8,799—*Ottawa*							
Grand Haven Municipal Hosp.	Gen	City	44	32	14	368	1,421
Grand Rapids, 164,292—Kent							
Blodgett Memorial Hosp.★+▲◇	Gen	NPAssn	170	137	40	900	4,434
Butterworth Hospital★+▲◇	Gen	NPAssn	230	220	56	1,656	8,703
Christian Psychopathic Hosp.	N&M	NPAssn	340	338	..	...	227
City General Hospital	Gen	City	35	15	..	...	113
		Corp	85	59	..	...	1,793
	of Christian Psychopathic Hospital						
		Church	259	221	62	1,874	7,927
Sunshine *Sanatorium*	*TB*	*County*	*145*	*102*	..	...	110
Grayling, 2,124—Crawford							
Mercy Hospital▲	Gen	Church	45	29	5	156	1,407
Greenville, 5,321—*Montcalm*							
United Memorial Hospital	Gen	NPAssn	30	18	8	210	819
Grosse Ile, 2,000—Wayne							
U. S. Naval Air Station Dispensary	Gen	Navy	105	43	..	...	1,923
Grosse Pointe, 6,179—Wayne							
Bon Secours Hospital	Gen	Church	35	30	..	...	740
Cottage Hospital+▲	Gen	NPAssn	54	31	25	518	2,456
Hamtramck, 49,839—Wayne							
St. Francis Hospital▲◇	Gen	Church	87	73	31	889	3,541
Hancock, 5,554—Houghton							
St. *Joseph's Hospital*▲◇	Gen	*Church*	*86*	*60*	*20*	*391*	*2,159*
Hart, 1,922—Oceana							
Oceana Hospital	Gen	NPAssn	20	18	7	170	881
Hartford, 1,694—Van Buren							
Van Buren County Hosp.	InstGen	County	31	.. No data supplied			
Hastings, 5,175—Barry							
Pennock Hospital	Gen	NPAssn	35	29	8	315	1,486
Hazel Park, —Oakland							
Helene Meinke Hospital	Gen	Indiv	12	*9*	*8*	*86*	*475*
Highland Park, 50,810—Wayne							
Highland Park General Hospital★▲◇	Gen	*City*	*255*	*209*	*45*	*1,342*	*7,778*
Hillsdale, 6,381—Hillsdale							
Hillsdale Community Health *Center*▲	Gen	*City*	*65*	*41*	*20*	*334*	*2,389*
Holland, 14,616—Ottawa							
Holland City Hospital	Gen	City	55	45	18	*520*	*1,903*
Houghton, 3,693—Houghton							
Copper Country Sanatorium	TB	County	66	56	..	...	50
Howell, 3,748—Livingston							
McPherson Memorial Hosp.	Gen	City	25	12	10	220	*477*
Michigan State Sanatorium+▲	TB	State	414	377	..	...	*326*
Ionia, 6,392—Ionia							
Ionia County Memorial Hosp.	Gen	County	20	17	9	237	890
Ionia State Hospital	Ment	State	1,035	1,026	..	...	148
Iron Mountain, 11,080—Dickinson							
Iron Mountain General Hosp.	Gen	NPAssn	28	26	8	261	1,127
Ironwood, 13,369—Gogebic							
Grand View *Hospital*▲	GenTb	County	*120*	*89*	*17*	*258*	*2,135*
Newport Hospital	Gen	NPAssn	12	8	5	130	374
Ishpeming, 9,491—Marquette							
Ishpeming Hospital▲	Gen	NPAssn	51	37	12	371	1,369
Jackson, 49,656—Jackson							
W. A. *Foote Memorial* Hospital★▲◇	Gen	City	150	165	35	816	5,631
Jackson County Sanatorium	TB	County	60	55	..	...	51
Mercy Hospital★▲◇	Gen	*Church*	125	99	25	929	4,780
Kalamazoo, 54,097—Kalamazoo							
Borgess Hospital+▲◇	Gen	Church	248	173	25	960	8,206
Bronson Methodist Hosp.▲◇	Gen	Church	140	125	30	965	4,812
Fairmount Hospital▲	TbIso	County	93	41	..	...	90
Kalamazoo State Hospital+⊙	Ment	State	3,380	3,327	..	...	561
Lakeview, 824—Montcalm							
Kelsey Hospital	Gen	Part	20	10	5	126	593
Lansing, 78,753—Ingham							
Edward W. Sparrow Hospital★▲◇	Gen	NPAssn	200	187	53	1,639	6,826
Ingham Sanatorium+▲	TB	County	134	121	..	...	225
St. Lawrence Hospital★▲◇	Gen	Church	210	177	60	1,363	7,147
Lapeer, 5,365—Lapeer							
Lapeer City Hospital	Gen	Part	13	9	4	110	575
Lapeer State Home and Training School	MeDe	State	4,259	3,067	6	2	420
	Gen	NPAssn	28	20	12	269	820
	Gen	NPAssn	46	23	10	272	1,053
Manistee, 8,694—Manistee							
Mercy Hospital and Sanit.▲	Gen	Church	59	33	12	225	1,053
Manistique, 5,399—Schoolcraft							
Shaw General Hospital	*Gen*	*Indiv*	*20*	*11*	*10*	*148*	*227*
Marquette, 15,928—Marquette							
Morgen Heights Sanat.+▲	TB	County	90	67	..	...	73
St. Luke's Hospital▲◇	Gen	NPAssn	152	106	12	265	2,575
St. Mary's Hospital	Gen	Church	63	43	14	211	1,157
Marshall, 5,253—Calhoun							
Oaklawn Hospital	Gen	NPAssn	21	8	12	170	*609*
Menominee, 10,230—Menominee							
St. Joseph's Hospital	*Gen*	*Church*	*55*	*57*	*13*	*277*	*2,219*
Midland, 10,329—Midland							
Midland Hospital	Gen	NPAssn	47	41	12	*568*	*2,270*

Key to symbols and abbreviations is on page 1091

MICHIGAN—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Milan, 2,340—Washtenaw							
Federal Correctional Institution	Inst	USPHS	38	27	..	...	369
Monroe, 18,478—Monroe							
Mercy Hospital▲	Gen	Church	65	48	24	646	2,645
Monroe Hospital	Gen	NPAssn	63	52	23	528	2,995
Morenci, 1,845—Lenawee							
Blanchard Hospital	Gen	NPAssn	14	8	6	60	546
Mount Clemens, 14,389—Macomb							
St. Joseph Hospital▲○	Gen	Church	126	135	34	1,059	4,650
Mount Pleasant, 8,413—Isabella							
Central Michigan Community Hospital	Gen	NPAssn	50	30	12	307	1,107
Munising, 4,409—Alger							
Munising Hospital	Gen	NPAssn	28	8	4	88	383
Muskegon, 47,697—Muskegon							
Hackley Hospital★▲○	Gen	NPAssn	137	126	33	1,151	4,888
Mercy Hospital+▲○	Gen	Church	120	98	33	1,577	6,891
Muskegon County Sanat.▲	TB	County	75	67	..	...	84
Newberry, 2,732—Luce							
Newberry Clinic Hospital	Gen	Part	20	16	8	132	566
Newberry State Hospital	Ment	State	1,597	1,557	..	...	631
Niles, 11,328—Berrien							
Pawating Hospital	Gen	NPAssn	72	43	20	460	1,692
Northville, 3,032—Wayne							
East Lawn Sanatorium	TB	Corp	95	70	..	...	127
Sessions Hospital	Gen	NPAssn	25	15	8	325	1,085
Wm H. Maybury Sanatorium (Detroit Municipal Tuberculosis Sanatorium)+▲	TB	City	843	722	..	...	874
Norway, 3,728—Dickinson							
Penn Iron Mining Company Hospital	Gen	NPAssn	14	8	7	136	393
Omer, 295—Arenac							
Omer Hospital	Gen	Indiv	16	8	5	53	288
Ontonagon, 2,290—Ontonagon							
Ontonagon Memorial Hosp.	Gen	City	30	16	10	63	517
Oshtemo, 235—Kalamazoo							
Pine Crest State Sanatorium	TB	State	120	75	..	...	75
Owosso, 14,424—Shiawassee							
Memorial Hospital▲	Gen	NPAssn	80	70	20	694	3,841
Paw Paw, 1,910—Van Buren							
Lake View Municipal Hosp.	Gen	City	22	6	6	162	773
Petoskey, 6,019—Emmet							
Little Traverse Hospital▲	Gen	NPAssn	103	72	10	166	2,438
Lockwood General Hospital	Gen	NPAssn	50	35	10	194	1,725
Pigeon, 949—Huron							
Scheurer Hospital	Gen	Indiv	18	9	7	48	232
Plainwell, 2,424—Allegan							
Wm. Crispe Hospital	Gen	City	29	20	11	265	823
Plymouth, 5,360—Wayne							
Plymouth Hospital	Gen	Part	10	3	3	36	119
Pontiac, 66,626—Oakland							
Oakland County Contagious Hospital	Iso	County	85	29	..	...	674
Oakland County Tuberculosis Sanatorium+▲	TB	County	250	181	..	...	214
Pontiac General Hospital★▲	Gen	City	180	130	40	1,298	6,536
Pontiac State Hospital+	Ment	State	2,318	2,346	..	...	448
St Joseph Mercy Hosp +▲○	Gen	Church	259	213	77	1,910	9,260
Port Huron, 32,759—St Clair							
Port Huron Hospital▲	Gen	NPAssn	120	90	24	784	4,220
Powers, 238—Menominee							
Pinecrest Sanatorium▲	TB	Counties	140	129	..	...	103
Reed City, 1,845—Osceola							
Reed City Hospital	Gen	City	31	30	7	216	1,261
River Rouge, 17,008—Wayne							
Sidney A. Sumby Memorial Hospital	Gen	Indiv	25	15	6	112	455
Rochester, 3,759—Oakland							
Haven Sanitarium	N&M	Corp	40	38	..	...	252
Romeo, 2,627—Macomb							
Wehenkel Tuberculosis Sanat.	TB	Indiv	40	40	..	...	157
Royal Oak, 25,087—Oakland							
Oakland Center Hospital	Gen	Indiv	12	8	..	...	416
Royal Oak General Hospital	Gen	City	23	21	12	321	1,366
Saginaw, 82,794—Saginaw							
Saginaw County Hospital▲	TbIso	County	185	164	..	...	•549
Saginaw County Infirmary Hospital	Gen	County	44	40	5	...	315
Saginaw General Hospital★▲○	Gen	NPAssn	200	125	50	1,015	5,510
St. Luke's Hospital▲	Gen	Church	57	45	18	488	2,381
St. Mary's Hospital★▲○	Gen	Church	168	127	36	1,044	5,822
St Clair, 3,471—St. Clair							
St. Clair Community Hosp.	Gen	City	19	12	10	247	661
St Johns, 4,422—Clinton							
Clinton Memorial Hospital▲	Gen	NPAssn	50	38	15	346	1,463
St Joseph, 8,963—Berrien							
St Joseph Michigan Hospital	Gen	NPAssn	35	27	12	193	1,388
Sault Ste. Marie, 15,847—Chippewa							
Chippewa County War Memorial Hospital▲	Gen	County	124	94	21	307	3,597
Sault Ste. Marie State Hosp.	Ment	State	504	...	..	Estab. 1945	
Selfridge Field, Macomb							
Station Hospital	Gen	Army	83	45	5	31	1,112
Shelby, 1,367—Oceana							
Shelby Hospital	Gen	City	10	7	4	85	330
South Haven, 4,745—Van Buren							
South Haven Hospital	Gen	City	42	28	11	228	1,161

MICHIGAN—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Stambaugh, 2,081—Iron							
General Hospital Company of Iron River District	Gen	NPAssn	28	16	12	249	832
Sturgis, 7,214—St. Joseph							
Sturgis Memorial Hospital	Gen	City	40	30	10	401	1,433
Tecumseh, 2,921—Lenawee							
Tecumseh Hospital	Gen	City	37	17	16	192	647
Three Rivers, 6,710—St. Joseph							
Three Rivers Hospital▲	Gen	City	37	27	9	184	1,250
Traverse City, 14,455—Grand Traverse							
Boardman Valley Hosptial	Gen	County	17	14	4	37	288
James Decker Munson Hosp ▲	Gen	State	121	91	17	390	2,585
Traverse City State Hosp.+▲	Ment	State	2,743	2,700	..	...	563
Wakefield, 3,591—Gogebic							
Wakefield Hospital	Gen	NPAssn	14	7	5	84	254
Wayne, 4,223—Wayne							
Wayne Clinic	Gen	NPAssn	15	8	6	126	589
Wayne General Hospital	Gen	NPAssn	27	23	8	283	1,119
West Branch, 1,962—Ogemaw							
Tolfree Memorial Hospital	Gen	City	16	13	5	179	825
Wyandotte, 30,618—Wayne							
Wyandotte General Hosp.+▲	Gen	City	173	113	42	1,312	6,101
Ypsilanti, 12,121—Washtenaw							
Beyer Memorial Hospital	GenIso	City	135	55	30	747	2,447
Hull Memorial City Hospital	Unit of Beyer Memorial Hospital						
Leland Sanatorium▲	TB	NPAssn	125	55	..	...	61
Ypsilanti State Hospital+▲○	Ment	State	3,345	3,294	..	...	850
Zeeland, 3,007—Ottawa							
Thomas G. Huizinga Memorial Hospital	Gen	NPAssn	15	13	8	149	682

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Ann Arbor, 29,815—Washtenaw							
Ann Arbor School for Handicapped Children	MeDe	Indiv	35	...	..	...	...
Coldwater, 7,343—Branch							
Coldwater State Home and Training School	MeDe	State	1,154	1,000	..	...	246
Detroit, 1,623,452—Wayne							
Barnett Clinic and Hospital	ENT	NPAssn	10	1	..	...	432
Central Hospital	Gen	Indiv	21	12	..	...	187
Denike Sanitarium	Alcoh	Corp	100	89	..	...	187
Doctors' Hospital	Conv	Indiv	35	29	.	...	167
General Hospital and Clinic	TB	Indiv	45	45	..	...	141
Good Samaritan Hospital	Conv	NPAssn	29	20	..	...	42
Douglas, 421—Allegan							
Community Hospital	Gen	NPAssn	10	4	5	40	154
East Grand Rapids (Reeds Lake P. O.), 4,899—Kent							
O'Keefe Sanitarium	Conv	Corp	30	27	..	...	81
Farmington, 1,510—Oakland							
Children's Hospital Convalescent Home	Conv	NPAssn	210	65	..	...	270
Ferndale, 22,523—Oakland							
Ardmore Hospital	Gen	NPAssn	22	13	12	218	927
Flint, 151,543—Genesee							
Genesee County Hospital and Infirmary	GenInst	County	100	40	8	20	280
Grand Rapids, 164,292—Kent							
Kent County Receiving Hosp	Ment	County	30	12	..	...	408
Mary Free Bed Guild Convalescent Home	Orth	NPAssn	106	60	..	..	341
Municipal Isolation Hospital	Iso	City	28	4	..	...	87
Salvation Army Evangeline Booth Home and Hospital	Mat	Church	34	29	25	137	172
Jackson, 49,656—Jackson							
Florence Crittenton Home and Hospital	Mat	NPAssn	22	12	12	36	47
Jackson County Isolation Hospital	Iso	County	45	6	..	...	205
Southern Michigan Prison Hospital	Inst	State	200	145	..	...	2,163
Lansing, 78,753—Ingham							
Boys' Vocational School Hospital	Inst	State	45	9	..	...	702
Lansing City Hospital	Iso	CyCo	45	10	5	...	305
Marquette, 15,928—Marquette							
Marquette Branch Prison Hospital	Inst	State	24	3	..	...	82
Mount Clemens, 14,389—Macomb							
Sigma Gamma Hospital School	Orth	NPAssn	50	40	..	...	137
Mount Pleasant, 8,413—Isabella							
Mount Pleasant State Home and Training School	MeDe	State	330	303	..	...	...
Northville, 3,032—Wayne							
Wayne County Training School	MeDe	County	835	637	..	...	201
Pontiac, 66,626—Oakland							
Oakland County Infirmary	Inst	County	200	209	..	...	250
Port Huron, 32,759—St Clair							
Port Huron Emergency Hosp.	Iso	City	18	3	6	...	147
Romulus, 755—Wayne							
Romulus Hospital	Gen	NPAssn	8	5	6	35	257
Stockbridge, 852—Ingham							
Rowe Memorial Hospital	Gen	Indiv	9	4	5	81	225
Trenton, 5,254—Wayne							
Trenton Hospital	Mat	Indiv	21	9	21	389	407
Vicksburg, 1,774—Kalamazoo							
Franklin Memorial Hospital	Gen	City	12	6	4	79	391

Key to symbols and abbreviations is on page 1091

MINNESOTA

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Ada, 1,938—Norman							
Ada Hospital	Gen	City	24	15	6	184	585
Adrian, 1,066—Nobles							
Adrian Hospital	Gen	NPAssn	17	10	6	125	424
Ah-gwah-ching, 15—Cass							
Minnesota State Sanatorium▲	TB	State	400	275	..	...	417
Albert Lea, 12,200—Freeborn							
Naeve Hospital○	Gen	NPAssn	72	62	18	768	4,514
Alexandria, 5,051—Douglas							
Our Lady of Mercy Hosp.▲	Gen	Church	28	20	10	191	849
St. Luke's Hospital	Gen	NPAssn	24	11	6	159	759
Anoka, 6,426—Anoka							
Anoka Hospital	Gen	NPAssn	16	8	9	142	321
Anoka State Hospital▲	Ment	State	1,400	1,373	..	...	141
Appleton, 1,577—Swift							
Kaufman Hospital	Gen	Indiv	20	11	5	70	445
Austin, 18,307—Mower							
St. Olaf Hospital	Gen	NPAssn	105	61	20	566	2,563
Battle Lake, 623—Otter Tail							
Otter Tail County Sanat.	TB	County	48	30	..	...	13
Bemidji, 9,427—Beltrami							
Lutheran Hospital▲⊙	Gen	NPAssn	60	43	15	342	1,847
Benson, 2,729—Swift							
Swift County Hospital	Gen	NPAssn	24	14	10	214	753
Bertha, 578—Todd							
Thiel Hospital	Gen	NPAssn	20	14	8	186	712
Bigfork, 382—Itasca							
Northern Itasca Hospital	Gen	City	10	8	4	60	456
Biwabik, 1,304—St. Louis							
Biwabik Hospital	Gen	Indiv	10	7	7	61	267
Blue Earth, 3,702—Faribault							
Blue Earth Hospital	Gen	Indiv	12	8	6	150	521
Braham, 578—Isanti							
Braham Hospital	Gen	Indiv	20	14	6	184	648
Brainerd, 12,071—Crow Wing							
St. Joseph's Hospital▲	Gen	Church	75	71	16	470	3,019
Breckenridge, 2,745—Wilkin							
St. Francis Hospital▲○	Gen	Church	60	65	12	397	2,743
Buffalo, 1,695—Wright							
Catlin Hospital	Gen	Part	12	7	4	54	211
Buhl, 1,600—St. Louis							
Range Hospital	Gen	County	46	43	..	...	669
Caledonia, 1,985—Houston							
Caledonia Hospital	Gen	Indiv	14	9	7	88	451
Cambridge, 1,592—Isanti							
Minnesota Colony for Epileptics	Epil	State	1,108	1,064	..	...	75
Canby, 2,099—Yellow Medicine							
John Swenson Memorial Hospital	Gen	City	27	17	5	119	669
Cannon Falls, 1,544—Goodhue							
Mineral Springs Sanatorium	TB	Counties	110	89	..	...	96
Cass Lake, 1,904—Cass							
Cass Lake Indian Hospital	Gen	IA	36	17	4	87	815
Chisholm, 7,487—St. Louis							
Mesaba Clinic Hospital	Gen	Part	18	11	5	129	484
Cloquet, 7,304—Carlton							
Fond du Lac Indian Hospital	Gen	IA	22	12	4	55	413
Raiter Hospital▲	Gen	NPAssn	36	16	12	138	985
Cokato, 1,175—Wright							
Cokato Hospital	Gen	Indiv	13	6	4	49	362
Crookston, 7,161—Polk							
Bethesda Hospital▲⊙	Gen	Church	54	49	12	199	1,885
St. Vincent's Hospital▲	Gen	Church	60	58	15	288	2,096
Sunnyrest Sanatorium	TB	Counties	72	42	..	...	24
Crosby, 2,954—Crow Wing							
Miner's Hospital	Gen	NPAssn	26	5	6	69	197
Dawson, 1,646—Lac qui Parle							
Dawson Hospital	Gen	NPAssn	35	23	5	96	705
Deerwood, 570—Crow Wing							
Deerwood Sanatorium	TB	Counties	27	20	..	...	19
Detroit Lakes, 5,015—Becker							
St. Mary's Hospital▲	Gen	Church	50	65	15	406	2,377
Duluth, 101,065—St. Louis							
Miller Memorial Hospital▲	Gen	City	83	71	..	...	1,255
St. Luke's Hospital★+▲○	Gen	NPAssn	237	237	33	1,253	8,995
St. Mary's Hospital★+▲○	Gen	Church	265	264	35	1,120	9,622
Ely, 5,970—St. Louis							
Shipman Hospital	Gen	Part	18	12	5	112	622
Eveleth, 6,887—St. Louis							
More Hospital and Clinic▲	Gen	Corp	30	17	10	126	634
Fairmont, 6,988—Martin							
Fairmont Community Hosp.	Gen	NPAssn	31	25	14	274	1,234
Hunt Hospital	Gen	Part	14	7	6	107	428
Faribault, 14,527—Rice							
Minnesota School for Feebleminded▲	MeDe	State	2,535	2,502	17	11	213
St. Lucas Evangelical Deaconess Hospital○	Gen	Church	61	69	18	456	2,734
Farmington, 1,580—Dakota							
Emond Hospital	Gen	NPAssn	11	5	6	50	170
Sanford Hospital	Gen	NPAssn	30	10	4	67	374
Fergus Falls, 10,848—Otter Tail							
Fergus Falls State Hosp.▲⊙	Ment	State	2,000	1,926	..	...	414
George B. Wright *Memorial* Hospital▲	Gen	NPAssn	50	41	12	273	1,823
St. Luke's Hospital▲	Gen	NPAssn	60	50	15	278	1,535
Fort Snelling, —Hennepin							
Station Hospital▲	Gen	Army	177	110	8	29	1,719
Fosston, 1,271—Polk							
Fosston Hospital	Gen	Part	12	8	6	141	374

MINNESOTA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Glencoe, 2,387—McLeod							
Glencoe Municipal Hospital	Gen	City	35	35	15	268	1,597
Glenwood, 2,564—Pope							
Glenwood Community Hosp.▲	Gen	City	26	21	10	182	826
Graceville, 1,020—Big Stone							
West Central Minnesota Hospital▲	Gen	NPAssn	28	23	8	231	1,223
Grand Rapids, 4,875—Itasca							
Itasca County Hospital▲⊙	Gen	County	55	47	15	491	1,819
Granite Falls, 2,388—Yellow Medicine							
Granite Falls Hospital	Gen	NPAssn	17	11	5	103	437
Riverside Sanatorium	TB	Counties	48	28	..	...	19
Hallock, 1,353—Kittson							
Kittson War Veterans' Memorial Hospital	Gen	NPAssn	30	21	10	160	779
Hastings, 5,662—Dakota							
Hastings State Hospital	Ment	State	1,124	1,025	..	...	15
Hendricks, 740—Lincoln							
Hendricks Community *Hosp.*	Gen	NPAssn	25	28	8	137	1,455
Heron Lake, 852—Jackson							
Heron Lake Hospital	Gen	NPAssn	10	5	5	56	302
Hibbing, 16,385—St. Louis							
Hibbing General Hospital+▲○	Gen	Church	132	113	20	528	4,234
Hutchinson, 3,887—McLeod							
Hutchinson Community Hosp.	Gen	NPAssn	48	24	12	285	1,013
Jackson, 2,840—Jackson							
Halloran Hospital	Gen	Indiv	18	12	5	136	610
Lake City, 3,204—Wabasha							
Lake City Hospital	Gen	City	32	20	8	92	637
Lake Park, 654—Becker							
Sand Beach Sanatorium	TB	Counties	42	30	..	...	27
Litchfield, 3,920—Meeker							
Litchfield Hospital	Gen	NPAssn	43	35	12	207	1,701
Little Falls, 6,047—Morrison							
St. Gabriel's Hospital▲○	Gen	Church	81	59	18	456	2,629
Littlefork, 608—Koochiching							
Littlefork Hospital	Gen	NPAssn	22	18	8	131	953
Long Prairie, 2,311—Todd							
Long Prairie Hospital	Gen	NPAssn	20	11	6	120	657
Luverne, 3,114—Rock							
Luverne Hospital	Gen	NPAssn	15	8	8	106	611
Madison, 2,312—Lac qui Parle							
Ebenezer Lutheran Hospital	Gen	Church	19	14	7	105	491
Mankato, 15,654—Blue Earth							
Immanuel Hospital▲	Gen	Church	65	53	15	382	1,829
St. Joseph's Hospital▲	Gen	Church	125	66	21	401	2,773
Marshall, 4,590—Lyon							
Anna Marie Memorial Hosp.	Gen	Indiv	13	11	8	225	593
Marshall Hospital	Gen	NPAssn	30	13	5	70	869
Melrose, 2,015—Stearns							
Melrose Hospital	Gen	Corp	20	12	8	160	883
Milaca, 1,627—Mille Lacs							
Memorial Hospital	Gen	Indiv	*18*	*12*	*6*	*175*	*706*
Minneapolis, 492,370—Hennepin							
Abbott Hospital▲○	Gen	Church	150	130	25	590	5,659
Asbury Hospital★▲○	Gen	Church	140	131	25	611	5,202
Eitel Hospital+▲○	Gen	NPAssn	120	103	18	518	4,405
Elizabeth Kenny Institute	*Orth*	*NPAssn*	*90*	*71*	..	...	209
Elliot Memorial Hospital	Unit of University Hospitals						
Fairview Hospital+▲○	Gen	Church	160	159	35	1,116	6,623
Franklin Hospital▲	ChrConv	NPAssn	68	61	..	...	151
George Chase Christian *Memorial Cancer Institute*	*Unit of University Hospitals*						
Janney Children's Hospital	Unit of Abbott Hospital						
Lutheran Deaconess Home and Hospital+▲○	Gen	Church	120	118	30	910	5,367
Maternity Hospital▲⊙	Mat	NPAssn	36	25	42	835	1,013
Minneapolis General Hospital★+▲○	Gen	City	574	411	55	206	8,030
Minnesota General Hospital	See University Hospitals						
Northwestern Hospital★▲○	Gen	NPAssn	252	228	40	1,151	7,031
Ripley Memorial Hospital	Unit of Maternity Hospital						
St. Andrew's Hospital▲○	Gen	NPAssn	82	52	18	319	2,511
St. Barnabas Hospital★▲○	Gen	NPAssn	199	160	45	1,333	7,203
St. Mary's Hospital★+▲○	Gen	Church	310	284	53	1,825	13,002
Sheltering Arms Hospital▲	Orth	NPAssn	42	26	..	...	241
Shriners Hospital for Crippled Children▲	Orth	NPAssn	60	47	..	...	103
Swedish Hospital★▲○	Gen	NPAssn	300	257	72	2,002	10,935
Todd Memorial Eye, Ear, Nose and Throat Hospital	Unit of University Hospitals						
U. S. Naval Air Station Dispensary	Gen	Navy	103	41	..	...	2,117
University Hospitals★+▲○	Gen	State	450	375	25	231	8,007
Veterans Admin. Center▲	Gen	Vet	789	688	..	...	4,411
William Henry Eustis Children's Hospital	*Unit of University Hospitals*						
Montevideo, 5,220—Chippewa							
Montevideo Hospital	Gen	NPAssn	50	23	10	295	1,532
Moorhead, 9,491—Clay							
St. Ansgars Hospital	Gen	Church	52	41	10	241	1,235
Moose Lake, 1,432—Carlton							
Moose Lake Community Hospital	Gen	Indiv	18	9	3	73	427
Moose Lake State Hosp.▲⊙	Ment	State	1,000	956	..	...	233
Morris, 3,214—Stevens							
Morris Hospital	Gen	Indiv	16	10	6	125	319
Stevens County Hospital	Gen	NPAssn	18	4	8	156	696
Mountain Lake, 1,745—Cottonwood							
Bethel Hospital	Gen	NPAssn	23	10	8	156	235
Clinic Hospital	Gen	Part	29	14	..	...	454

Key to symbols and abbreviations is on page 1091

MINNESOTA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
New Prague, 1,645—Le Sueur							
New Prague Community Hospital	Gen	NPAssn	18	11	6	169	483
New Ulm, 8,743—Brown							
Loretto Hospital	Gen	Church	50	43	10	252	1,416
Union Hospital	Gen	NPAssn	64	45	12	222	1,413
Nopeming, 75—St. Louis							
Nopeming Sanatorium+▲	TB	County	281	257	..	...	324
Northfield, 4,533—Rice							
Northfield City Hospital	Gen	City	32	27	10	226	997
Oak Terrace, 200—Hennepin							
Christian Memorial Tuberculosis Hospital	Unit of Glen Lake Sanatorium						
Glen Lake Sanatorium+▲⊙	TB	County	681	507	..	...	500
Ortonville, 2,469—Big Stone							
Ortonville Municipal Hosp.	Gen	City	15	9	6	114	336
Owatonna, 8,694—Steele							
Owatonna City Hospital	Gen	City	50	41	10	360	1,819
Parkers Prairie, 781—Otter Tail							
Leibold Hospital	Gen	Indiv	18	7	6	75	215
Paynesville, 1,317—Stearns							
Myre Hospital	Gen	Part	9	4	3	43	127
Perham, 1,534—Otter Tail							
St. James' Hospital	Gen	Church	40	24	10	141	1,007
Pine City, 1,718—Pine							
Lakeside Memorial Hospital	Gen	NPAssn	30	16	6	73	392
Pipestone, 4,682—Pipestone							
Ashton Memorial Hospital	Gen	NPAssn	45	27	11	300	1,482
Preston, 1,447—Fillmore							
Preston Hospital	Gen	Indiv	13	10	7	92	240
Puposky, 75—Beltrami							
Lake Julia Tuberculosis Sanatorium	TB	Counties	52	44	..	...	53
Redlake, 150—Beltrami							
Redlake Indian Hospital	Gen	IA	23	23	6	60	391
Red Wing, 9,962—Goodhue							
Red Wing Hospital	Gen	City	40	33	9	138	1,046
St. John's Hospital▲○	Gen	NPAssn	90	79	15	505	2,872
Redwood Falls, 3,270—Redwood							
Redwood Falls Hospital	Gen	City	23	13	8	203	633
Richmond, 634—Stearns							
Richmond Hospital	Gen	NPAssn	11	7	4	95	512
Rochester, 26,312—Olmsted							
Colonial Hospital▲○	Gen	Corp	258	244	..	...	8,154
Kahler Hospital▲○	Gen	Corp	130	117	..	...	4,366
Rochester State Hospital▲⊙	Ment	State	1,638	1,569	..	...	680
St. Mary's Hospital▲○	Gen	Church	797	688	56	283	16,961
Worrall Hospital▲○	ENTSkCa	Corp	188	163	..	...	8,389
Roseau, 1,775—Roseau							
Budd Hospital	Gen	NPAssn	25	15	9	181	743
Rush City, 1,020—Chisago							
Rush City Hospital	Gen	City	21	21	7	178	858
St. Cloud, 24,173—Stearns							
Minnesota State Reformatory Hospital	Inst	State	30	9	..	...	277
St. Cloud Hospital▲○	Gen	Church	246	194	40	1,227	7,773
Veterans Admin. Hospital▲⊙	Ment	Vet	1,590	1,228	..	...	583
St. James, 3,400—Watonwan							
St. James Hospital	Gen	Church	26	24	10	125	763
St. Paul, 287,736—Ramsey							
Ancker Hospital★+▲○	GenTb	CyCo	850	500	55	174	6,387
Bethesda Hospital★▲○	Gen	Church	160	150	38	1,266	6,350
Charles T. Miller Hosp.★+▲○	Gen	NPAssn	275	281	50	1,375	9,855
Children's Hospital▲⊙	Chil	NPAssn	65	58	..	...	2,029
Gillette State Hospital for Crippled Children+▲⊙	Orth	State	225	151	..	...	536
Midway Hospital+▲○	Gen	Church	125	98	30	992	4,447
Mounds Park Hospital▲○	Gen	Church	126	124	14	410	2,489
Northern Pacific Beneficial Association Hospital+▲	Gen	NPAssn	135	110	12	91	4,411
Ramsey County Tuberculosis Pavilion	Unit of Ancker Hospital						
St. John's Hospital▲	Gen	Church	65	68	15	460	2,961
St. Joseph's Hospital★▲○	Gen	Church	263	230	50	1,415	11,514
St. Luke's Hospital▲	Gen	NPAssn	106	77	16	302	3,009
Salvation Army Booth Memorial Hospital	Mat	Church	50	40	11	114	155
Samaritan Hospital	Gen	NPAssn	26	22	6	54	545
West Side General Hospital▲	Gen	Church	55	63	15	360	1,906
St. Peter, 5,870—Nicollet							
Community Hospital	Gen	City	30	16	11	270	1,159
St. Peter State Hospital+▲⊙	Ment	State	2,619	2,174	..	...	678
Sandstone, 1,559—Pine							
Federal Correctional Institution▲	Inst	USPHS	27	2	..	...	539
Shakopee, 2,418—Scott							
St. Francis Hospital	Gen	Church	19	16	8	202	801
Slayton, 1,587—Murray							
Home Hospital	Gen	NPAssn	25	16	6	310	1,711
Sleepy Eye, 2,923—Brown							
Sleepy Eye Municipal Hosp.	Gen	City	30	13	10	184	765
Springfield, 2,361—Brown							
St. John's Hospital	Gen	Church	25	18	11	...	570
Spring Grove, 967—Houston							
Spring Grove Hospital	Gen	NPAssn	18	9	7	85	324
Staples, 2,952—Todd							
Municipal Hospital	Gen	City	26	18	8	110	803
[illegible]	Gen	NPAssn	15	13	5	64	475
Lakeview Memorial Hospital▲	Gen	CyCo	42	37	8	245	1,541
Minnesota State Prison Hospital▲	Inst	State	65	22	..	...	620
Thief River Falls, 6,019—Pennington							
Mercy Hospital	Gen	NPAssn	28	26	8	303	1,256
Oakland Park Sanatorium	TB	Counties	65	42	..	...	29
St. Luke's Hospital▲	Gen	NPAssn	42	29	6	186	1,094
Tracy, 3,085—Lyon							
Clinic Hospital	Gen	NPAssn	15	7	4	60	443
Tracy Hospital	Gen	NPAssn	35	24	9	150	829
Two Harbors, 4,046—Lake							
Two Harbors Hospital	Gen	NPAssn	32	19	4	126	802
Tyler, 1,005—Lincoln							
Tyler Hospital	Gen	City	36	26	10	208	1,176
Virginia, 12,264—St. Louis							
Virginia Municipal Hospital▲	Gen	City	100	54	25	380	2,503
Wabasha, 2,368—Wabasha							
Buena Vista Sanatorium	TB	Counties	30	21	..	...	41
St. Elizabeth's Hospital	Gen	Church	70	36	9	190	978
Waconia, 1,315—Carver							
Nagel Hospital	Gen	Indiv	28	15	8	73	437
Wadena, 2,916—Wadena							
Fair Oaks Lodge Sanatorium	TB	Counties	36	22	..	...	46
Wesley Hospital▲	Gen	NPAssn	43	34	10	399	1,555
Walker, 939—Cass							
Walker Hospital	Gen	Indiv	16	4	6	33	142
Warren, 1,639—Marshall							
Warren Hospital▲	Gen	Church	30	22	6	138	931
Warroad, 1,309—Roseau							
Warroad Municipal Hospital	Gen	City	25	17	6	77	507
Waseca, 4,270—Waseca							
Waseca Memorial Hospital	Gen	CyCo	25	12	9	282	843
[illegible] ospital	Gen	IA	21	13	8	92	509
Rice Memorial Hospital	Gen	City	95	57	18	542	2,700
Willmar State Hospital	Ment	State	1,450	1,420	..	...	223
Windom, 2,807—Cottonwood							
Windom Hospital	Gen	NPAssn	28	17	10	127	687
Winnebago, 1,992—Faribault							
Winnebago Community Hosp.	Gen	Part	12	7	6	114	392
Winona, 22,490—Winona							
Winona General Hospital▲	Gen	NPAssn	112	71	20	627	2,570
Worthington, 5,918—Nobles							
Southwestern Minnesota Sanatorium	TB	Counties	54	33	..	...	30
Worthington Hospital⊙	Gen	NPAssn	34	25	12	281	1,450

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Comfrey, 555—Brown							
Comfrey Hospital	Gen	Indiv	8	4	4	46	187
Ely, 5,970—St. Louis							
Detention Hospital	Iso	City	19	1	..	...	5
Hastings, 5,662—Dakota							
[illegible]	Gen	NPAssn	25	12	4	21	192
[illegible]	Gen	City	13	5	5	66	201
Minneapolis, 492,370—Hennepin							
Glenwood Hills Hospitals	N&M	NPAssn	42	52	..	...	390
Homewood Hospital	Unit of Glenwood Hills Hospitals						
Minnesota Soldiers' Home *Hospital*	Inst	State	85	50	..	...	214
Parkview Sanatorium	Chr	City	174	90	..	...	50
Rest Hospital	N&M	Part	19	18	..	...	250
Vocational Nursing Home	Conv	NPAssn	33	29	..	...	15
Women's Welfare League Home for Convalescents	Conv	NPAssn	25	19	..	...	34
Owatonna, 8,694—Steele							
Minnesota State Public School Hospital	Inst	State	50	...	..	...	...
Pelican Rapids, 1,560—Otter Tail							
Dr. Boysen's Hospital	Gen	Indiv	8	1	4	33	63
Pipestone, 4,682—Pipestone							
Pipestone General Indian Hospital	Gen	IA	36	16	4	29	310
Red Wing, 9,962—Goodhue							
Minnesota State Training School for Boys	Inst	State	25	8	..	...	1,126
St [illegible]							
[illegible] of [illegible]	TB	CyCo	80	76	..	...	20
Shakopee, 2,418—Scott							
Mudcura Sanitarium	Conv	Corp	75	42	..	...	1,093
Wayzata, 1,473—Hennepin							
Minnetonka Hospital	Gen	NPAssn	15	7	3	52	190

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Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Aberdeen, 4,746—Monroe							
Aberdeen Hospital	Gen	NPAssn	25	10	7	99	463
Amory, 3,727—Monroe							
Gilmore Sanitarium	Gen	NPAssn	23	7	4	77	484
Baldwyn, 1,279—Lee							
Baldwyn Hospital	Gen	Indiv	14	7	2	93	361
Biloxi, 17,475—Harrison							
New Biloxi Hospital○	Gen	NPAssn	85	41	15	516	1,978
Veterans Admin. Hospital▲	Gen	Vet	241	169	..	...	2,495
Booneville, 1,893—Prentiss							
North East Mississippi Hosp.	Gen	NPAssn	49	27	9	217	1,151
Brandon, 1,184—Rankin							
Brandon Hospital	Gen	Indiv	32	9	5	121	1,021

Key to symbols and abbreviations is on page 1091

MISSISSIPPI—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Brookhaven, 6,232—Lincoln							
Kings Daughters Hospital	Gen	NPAssn	78	58	15	493	1,950
Camp Shelby, 30—Forrest							
Regional Hospital▲	Gen	Army	1,000	...	..	Estab. 1940	
Canton, 6,011—Madison							
Kings Daughters Hospital	Gen	NPAssn	38	14	4	118	1,067
Centreville, 1,163—Wilkinson							
Field Memorial Hospital▲	Gen	Part	28	22	8	186	1,130
Charleston, 2,100—Tallahatchie							
Tallahatchie Hospital	Gen	Indiv	26	17	4	115	972
Clarksdale, 12,168—Coahoma							
Clarksdale Hospital	Gen	NPAssn	32	11	10	193	902
Cleveland, 4,189—Bolivar							
City Hospital	Gen	City	22	11	9	168	676
Columbia, 6,064—Marion							
Columbia Clinic Hospital▲○	Gen	NPAssn	37	27	6	117	1,976
Daly Hospital	Gen	Indiv	19	17	6	210	1,423
Columbus, 13,645—Lowndes							
Columbus Hospital	Gen	NPAssn	25	16	9	206	1,000
Doster Hospital○	Gen	Indiv	44	28	11	213	1,534
Corinth, 7,818—Alcorn							
Corinth Hospital	Gen	Part	20	13	9	177	771
McRae Hospital	Gen	NPAssn	50	14	8	82	773
▲	Gen	NPAssn	118	100	24	383	4,001
Delta Medical Center	Ven	USPHS	228	133	..	...	6,637
Greenwood Colored Hospital	Gen	Part	25	9	4	30	769
Greenwood-Leflore Hospital○	Gen	CyCo	58	53	25	401	2,715
Grenada, 5,831—Grenada							
Grenada General Hospital○	Gen	Part	67	37	10	230	2,273
Gulfport, 15,195—Harrison							
City and County Hospital	Gen	CyCo	75	41	25	447	3,208
U. S. Naval Dispensary	Gen	Navy	648	334	18	127	8,177
Veterans Admin. Hospital▲	Ment	Vet	972	914	..	...	861
Hattiesburg, 21,026—Forrest							
Methodist Hospital○	Gen	Church	75	61	16	508	3,538
South Mississippi Infirmary▲	Gen	Indiv	65	24	10	255	1,581
Houston, 1,729—Chickasaw							
Houston Hospital▲○	Gen	NPAssn	50	40	8	131	1,718
Indianola, 3,604—Sunflower							
Kings Daughters Hospital	Gen	NPAssn	23	12	6	68	601
Jackson, 62,107—Hinds							
Jackson Infirmary▲	Gen	NPAssn	81	58	11	280	3,725
Mississippi Baptist Hosp.▲○	Gen	Church	185	177	30	869	9,879
Mississippi State Charity Hospital○	Gen	State	103	62	4	16	1,365
Veterans Admin. Hospital▲	Gen	Vet	2,283	...	..	Estab. 1946	
Dr. Willis Walley Hospital	Gen	NPAssn	65	11	6	71	667
Kosciusko, 4,291—Attala							
Montfort Jones Memorial Hospital	Gen	City	50	24	12	282	1,557
Laurel, 20,598—Jones							
Laurel General Hospital○	Gen	Indiv	60	50	12	469	3,514
South Mississippi Charity [illegible]	Gen	State	110	43	15	189	1,829
	Gen	County	25	11	6	86	650
Lumberton, 1,485—Lamar							
City Hospital	Gen	Indiv	20	10	8	90	500
Macon, 2,261—Noxubee							
Macon Hospital	Gen	NPAssn	25	14	7	80	789
Magee, 1,221—Simpson							
Magee General Hospital	Gen	Indiv	28	15	5	...	1,200
Marks, 1,818—Quitman							
Marks Hospital	Gen	Indiv	18	6	9	100	300
[illegible]							
	Gen	NPAssn	27	20	6	163	1,569
	Gen	NPAssn	28	20	4	241	1,274
Anderson Infirmary○	Gen	NPAssn	45	45	5	152	3,247
East Mississippi State Hosp.	Ment	State	800	732	..	...	213
Hoye's Sanitarium	N&M	Indiv	32	22	..	...	510
Lewis Hospital	Gen	Indiv	14	10	4	47	672
Matty Hersee Hospital○	Gen	State	85	45	8	163	1,465
Meridian Sanitarium▲	Gen	Church	55	43	11	310	2,510
Riley's Hospital	Gen	NPAssn	45	17	6	97	1,064
Rush's Infirmary▲○	Gen	Part	70	58	10	310	2,000
[illegible]							
	Gen	Part	22	5	4	105	614
Natchez [illegible]	Gen	State	100	33	25	105	996
Natchez Sanatorium	Gen	Corp	50	30	10	194	1,151
New Albany, 3,602—Union							
Mayes Hospital	Gen	NPAssn	44	26	5	228	1,400
New Albany Hospital and Clinic	Gen	NPAssn	12	8	2	56	586
Newton, 1,800—Newton							
Newton Infirmary	Gen	NPAssn	25	14	6	203	1,120
Okolona, 2,117—Chickasaw							
Dr. B. DeVan Hansell's Clinic and Hospital	Gen	Indiv	20	..No data supplied			
Oxford, 3,433—Lafayette							
Bramlett Hospital	Gen	Indiv	45	21	10	83	1,000
Oxford Hospital	Gen	Indiv	30	26	5	134	1,538
Pascagoula, 5,900—Jackson							
Jackson County Hospital	Gen	County	85	43	20	717	2,827
Philadelphia, 3,711—Neshoba							
Choctaw-Mississippi Indian Hospital	Gen	IA	35	16	7	57	616
Philadelphia Hospital	Gen	NPAssn	20	No data supplied			
Picayune, 5,129—Pearl River							
Martin Sanatorium	Gen	NPAssn	26	12	4	137	814
Pontotoc, 1,832—Pontotoc							
Pontotoc Clinic	Gen	Part	17	9	3	123	523
Poplarville, 1,664—Pearl River							
Poplarville Hospital	Gen	Corp	26	9	4	60	1,000
Rosedale, 2,063—Bolivar							
Dr. Nobles' Clinic	Gen	Indiv	25	11	1	12	774
Rosedale-Bolivar County Hospital	Gen	City	14	6	4	24	302
Sanatorium, 200—Simpson							
Mississippi State Tuberculosis Sanatorium+▲	TB	State	425	244	..	...	521
Shelby, 1,956—Bolivar							
Hall Clinic and Hospital	Gen	NPAssn	21	17	7	79	636
State College, 300—Oktibbeha							
James Z. George Memorial Hospital▲	Inst	State	46	4	..	...	266
Tupelo, 8,212—Lee							
North Mississippi Community Hospital▲	Gen	NPAssn	49	45	10	297	2,007
Tylertown, 1,376—Walthall							
Tylertown Hospital	Gen	NPAssn	38	19	6	307	1,634
Walthall Hospital	Gen	NPAssn	23	17	4	181	1,097
Union, 1,543—Newton							
Laird's Hospital	Gen	NPAssn	30	12	6	151	779
Vicksburg, 24,460—Warren							
Mercy Hospital-Street Memorial▲○	Gen	Church	110	84	17	236	3,617
Mississippi State Charity Hospital	Gen	State	100	40	10	69	1,259
Vicksburg Hospital▲○	Gen	NPAssn	65	60	10	140	2,015
Vicksburg Infirmary▲○	Gen	NPAssn	55	39	13	139	1,587
Water Valley, 3,340—Yalobusha							
Water Valley Hospital	Gen	Part	25	11	5	50	532
West Point, 5,627—Clay							
Flowers Hospital	Gen	Part	25	14	8	147	751
Whitfield, 300—Rankin							
Mississippi State Hospital▲	Ment	State	3,559	3,340	..	...	1,442
Winona, 2,533—Montgomery							
Winona Infirmary▲○	Gen	NPAssn	35	10	5	123	657
Yazoo City, 7,258—Yazoo							
Kings Daughters Hospital	Gen	NPAssn	30	12	12	180	934
Yazoo Clinic and Hospital	Gen	Part	20	10	3	5	526

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Bay St. Louis, 4,138—Hancock							
Kings Daughters and Sons Hospital	Gen	NPAssn	14	11	6	161	900
E[illegible]							
	MeDe	State	375	...	..	...	...
Greenville, 20,892—Washington							
Colored Kings Daughters Hospital	Gen	Indiv	65	51	2	30	1,227

MISSOURI

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Bethany, 2,682—Harrison							
Bethany Hospital and Clinic	Gen	Indiv	15	9	5	89	464
Bonne Terre, 3,730—St. Francois							
Bonne Terre Hospital	Gen	NPAssn	44	31	7	108	1,595
Boonville, 6,089—Cooper							
St. Joseph's Hospital▲○	Gen	Church	75	49	15	278	1,795
Butler, 2,958—Bates							
Butler Memorial Hospital	Gen	City	35	12	6	150	820
California, 2,525—Moniteau							
Latham Sanitarium	Gen	Indiv	33	15	6	101	1,823
Cape Girardeau, 19,426—Cape Girardeau							
St. Francis Hospital▲	Gen	Church	114	76	22	607	3,449
Southeast Missouri Hospital	Gen	NPAssn	65	61	14	467	2,393
Carthage, 10,585—Jasper							
McCune-Brooks Hospital	Gen	City	50	31	14	351	2,158
Cassville, 1,214—Barry							
Barry County Hospital and Clinic	Gen	Indiv	13	7	4	52	404
Clayton, 13,669—St. Louis							
St. Louis County Hosp.*+▲	Gen	County	175	97	35	295	2,895
Clinton, 6,041—Henry							
Clinton General Hospital	Gen	NPAssn	20	15	6	143	623
Columbia, 18,399—Boone							
Boone County General Hospital▲	Gen	County	48	25	6	142	902
Ellis Fischel State Cancer Hospital+▲	Cancer	State	100	91	..	...	1,561
Noyes Hospital	Unit of University Hospitals						
Parker Memorial Hospital	Unit of University Hospitals						
State Hospital for Crippled Children	Unit of University Hospitals						
University Hospitals+▲○	Gen	State	150	80	10	170	1,631
Excelsior Springs, 4,864—Clay							
Excelsior Springs Sanitarium and Hospital	Gen	NPAssn	25	21	8	190	850
Veterans Admin. Hospital▲	TB	Vet	271	190	..	...	412
Farmington, 3,738—St. Francois							
State Hospital No. 4▲	Ment	State	1,612	1,759	..	...	512
Fayette, 2,605—Howard							
Lee Hospital	Gen	Part	20	15	5	28	750

Key to symbols and abbreviations is on page 1091

MISSOURI—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Fulton, 8,297—Callaway							
State Hospital No. 1+▲	Ment	State	2,852	2,501	..	...	678
Hannibal, 20,865—Marion							
Levering Hospital▲	Gen	City	150	89	21	300	3,002
St. Elizabeth's Hospital▲	Gen	Church	100	70	26	365	2,821
Independence, 16,066—Jackson							
Independence Sanitarium and Hospital▲◇	Gen	Church	109	87	34	742	3,919
Ironton, 1,083—Iron							
St. Mary's of the Ozarks	Gen	Church	30	33	10	288	851
Jefferson Barracks, 842—St. Louis							
Station Hospital▲	Gen	Army	177	110	6	19	1,654
Veterans Admin Hospital▲	Gen	Vet	754	487	..	...	5,003
Jefferson City, 24,268—Cole							
Missouri State Penitentiary Hospital▲	Inst	State	203	81	..	...	1,746
St. Mary's Hospital	Gen	Church	100	87	24	600	3,382
Joplin, 37,144—Jasper							
Freeman Hospital	Gen	Church	100	61	25	364	2,478
St. John's Hospital◇	Gen	Church	100	104	26	753	3,923
Kansas City, 399,178—Jackson							
Children's Mercy Hosp +▲○	Chil	NPAssn	144	134	..	...	2,085
Fairmount Maternity Hosp.	Mat	Corp	60	46	24	211	219
Kansas City General Hospital★+▲◇	Gen	City	500	359	40	469	8,077
Kansas City General Hospital No. 2★▲◇	Gen	City	252	146	24	396	3,302
Kansas City Municipal Tuberculosis Hospital+▲	TB	City	245	169	..	...	142
Major Clinic	N&M	Indiv	35	14	..	..	145
Menorah Hospital★▲	Gen	NPAssn	135	118	25	391	4,185
Municipal Contagious Disease Hospital	Unit of Kansas City General Hospital						
Neurological Hospital▲	N&M	NPAssn	38	36	..	...	528
Ralph Sanitarium	Drug	Indiv	20	10	..	...	157
Research Hospital★+▲◇	Gen	NPAssn	211	218	40	1,025	6,578
St. Joseph Hospital★+▲◇	Gen	Church	256	235	40	1,380	9,561
St. Luke's Hospital★+▲◇	Gen	Church	240	236	46	1,310	7,198
St. Mary's Hospital★+▲◇	Gen	Church	150	151	32	867	5,862
St Vincent's Hospital▲	Mat	Church	36	24	30	577	661
Trinity Lutheran Hosp ★▲◇	Gen	Church	125	106	25	763	3,707
Wheatley Provident Hosp ▲○	Gen	NPAssn	67	47	5	97	1,214
Willows Maternity Sanit.	Mat	Indiv	80	81	75	274	332
Kennett, 6,335—Dunklin							
Presnell Hospital	Gen	Part	45	32	18	247	2,098
Kirksville, 10,080—Adair							
Grim Smith Hosp and Clinic	Gen	Corp	52	46	13	188	1,633
Stickler Hospital	Gen	Corp	25	13	6	36	494
Kirkwood, 12,132—St Louis							
Oakland Park Hospital	N&M	Corp	12	9	..	...	18
U. S Marine Hospital▲	Gen	USPHS	144	112	..	...	1,670
Koch, 900—St Louis							
Robert Koch Hospital+▲○	TB	City	688	437	..	...	348
Lebanon, 5,025—Laclede							
Louise G. Wallace Hospital	Gen	NPAssn	80	23	20	276	1,274
Little Blue, 50—Jackson							
Rural Jackson County Emergency Hospital	Gen	County	65	56	9	40	633
Louisiana, 4,669—Pike							
Pike County Hospital	Gen	County	50	27	11	149	1,190
Marshall, 8,533—Saline							
Georgia Brown Blosser Home for Crippled Children	Orth	NPAssn	60	26	..	...	74
John Fitzgibbon Memorial Hospital	Gen	NPAssn	40	23	8	295	1,119
Maryville, 5,700—Nodaway							
St. Francis Hospital▲	Gen	Church	100	60	18	401	2,681
Mexico, 9,053—Audrain							
Audrain Hospital▲	Gen	County	56	39	18	283	1,653
Moberly, 12,920—Randolph							
Wabash Employes' Hosp ▲	Indus	NPAssn	35	19	..	...	633
Woodland Hospital	Gen	Corp	35	23	5	87	896
Monett, 4,395—Barry							
St. Vincent Hospital	Gen	Church	20	16	8	155	669
Mount Vernon, 1,982—Lawrence							
Missouri State Sanatorium▲	TB	State	650	529	..	...	610
Neosho, 5,318—Newton							
Sale Memorial Hospital and Clinic	Gen	Indiv	40	23	18	296	1,467
Nevada, 8,181—Vernon							
Nevada City Hospital	Gen	City	33	27	7	254	1,006
State Hospital No. 3▲	Ment	State	2,206	2,101	..	...	475
Poplar Bluff, 11,163—Butler							
Brandon Hospital	Gen	Indiv	40	4	4	51	525
Lucy Lee Hospital	Gen	Indiv	30	28	12	372	2,111
Poplar Bluff Hospital	Gen	Indiv	70	55	15	311	2,562
Robertson, 300—St. Louis							
Jewish Sanatorium	Chr	NPAssn	70	65	..	...	26
Rolla, 5,141—Phelps							
Missouri Trachoma Hospital	Trach	State	65	45	..	...	503
Nelle McFarland Memorial Hospital	Gen	Indiv	90	33	11	167	1,191
St. Charles, 10,803—St. Charles							
St Joseph's Hospital▲	Gen	Church	85	52	20	481	2,162
St Joseph, 75,711—Buchanan							
Missouri Methodist Hosp.★▲◇	Gen	Church	200	154	25	681	5,992
St. Joseph's Hospital★▲◇	Gen	Church	130	102	20	592	3,623
State Hospital No 2+▲	Ment	State	2,889	2,652	..	...	473
St Louis, 816,048—St. Louis City							
Alexian Brothers Hosp.+▲◇	Gen	Church	176	137	..	...	2,203
Barnard Free Skin and Cancer Hospital+▲	SkCancer	NPAssn	42	31	..	...	838

MISSOURI—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Barnes Hospital★+▲◇	Gen	Church	585	462	..	...	14,473
Bethesda General Hospital▲	Gen	NPAssn	100	65	20	383	1,503
Christian Hospital★▲	Gen	NPAssn	110	87	25	920	3,066
City Sanitarium+▲○	Ment	City	3,500	3,405	..	...	544
De Paul Hospital★+▲◇	Gen	Church	260	245	64	1,864	7,490
Evangelical Deaconess Hospital★▲◇	Gen	Church	225	205	40	1,139	5,716
Faith Hospital	Gen	NPAssn	35	22	12	191	1,052
Firmin Desloge Hosp ★+▲◇	Unit of St. Mary's Group of Hospitals						
Frisco Employes' Hospital▲	Indus	NPAssn	80	57	..	...	1,893
Homer G. Phillips Hosp.★+▲◇	Gen	City	728	496	49	1,465	10,189
Jewish Hospital★+▲◇	Gen	NPAssn	256	250	44	879	7,258
Josephine Heitkamp Memorial Hospital▲	Gen	Church	45	42	20	542	2,161
Lutheran Hospital★▲◇	Gen	Church	158	161	30	1,207	5,958
McMillan Hospital▲	Unit of Barnes Hospital						
Midwestern Medical Center	Ven	USPHS	129	103	..	...	5,253
Missouri Baptist Hosp ★+▲◇	Gen	Church	450	356	50	925	10,795
Missouri Pacific Hospital▲	Indus	NPAssn	300	193	..	...	6,555
Mount St. Rose Sanat.+▲○	Unit of St Mary's Group of Hospitals						
Park Lane Memorial Hosp.	Gen	Corp	125	99	50	507	2,978
Peoples Hospital▲	Gen	NPAssn	83	72	20	260	1,991
St Ann's Maternity Hospital	Mat	Church	30	13	10	72	73
St. Anthony's Hospital★+▲	Gen	Church	211	179	60	1,759	6,422
St. John's Hospital★+▲◇	Gen	Church	314	270	56	1,264	8,104
St Louis Children's Hospital+▲○	Chil	NPAssn	195	128	..	...	2,852
St. Louis City Hospital★+▲◇	Gen	City	1,037	672	67	916	15,406
St. Louis Maternity Hospital+▲○	Mat	NPAssn	135	72	125	2,322	2,945
St. Luke's Hospital★+▲◇	Gen	Church	184	154	56	753	4,712
St. Mary's Group of Hospitals★+▲◇	GenTb	Church	673	641	78	2,135	12,740
St. Mary's Hospital★+▲◇	Unit of St. Mary's Group of Hospitals						
St. Mary's Infirmary★▲◇	Gen	Church	146	146	33	956	4,766
St Vincent's Sanitarium+▲○	N&M	Church	250	213	..	...	250
Shriners Hospital for Crippled Children+▲○	Orth	NPAssn	100	59	..	...	396
U. S. Naval Air Station Dispensary	Gen	Navy	80	50	..	...	3,300
Sedalia, 20,428—Pettis							
John H. Bothwell Memorial Hospital▲	Gen	City	83	58	21	536	2,130
Sikeston, 7,944—Scott							
Sikeston General Hospital	Gen	City	20	16	10	395	901
Smithville, 772—Clay							
Smithville Community Hosp.	Gen	NPAssn	24	8	10	55	338
Springfield, 61,258—Greene							
Burge Hospital▲◇	Gen	Church	85	63	26	282	3,175
City Hospital	Gen	City	20	7	6	92	566
Medical Center for Federal Prisoners▲	Inst	Fed	1,142	601	..	...	507
St. John's Hospital▲◇	Gen	Church	156	103	30	788	4,256
Springfield Baptist Hosp ▲◇	Gen	NPAssn	100	80	14	344	3,106
Trenton, 7,046—Grundy							
Cullers Hospital	Gen	Indiv	20	12	7	92	594
Wright Memorial Hospital	Gen	NPAssn	18	11	4	106	689
Warrensburg, 5,868—Johnson							
Warrensburg Clinic and Hosp.	Gen	Part	32	21	6	290	1,416
Washington, 6,756—Franklin							
St. Francis Hospital	Gen	Church	55	55	12	425	2,150
Waynesville, 465—Pulaski							
Waynesville General Hosp.	Gen	State	46	..	13	Estab. 1945	
Webb City, 7,033—Jasper							
Jasper County Tuberculosis Hospital	TB	County	110	72	..	...	91
Webster Groves, 18,394—St. Louis							
Glenwood Sanatorium	N&M	Corp	73	60	..	...	142
West Plains, 4,026—Howell							
Christa Hogan Hospital	Gen	Indiv	18	12	5	127	437

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Independence, 16,066—Jackson							
Vaile Sanitarium	Conv	Indiv	23	11	..	...	24
Kansas City, 399,178—Jackson							
Florence Crittenton Home	Mat	NPAssn	15	13	20	35	40
Florence Home for Colored Girls	Mat	NPAssn	52	24	8	63	72
Trowbridge Training School for Nervous and Backward Children	MeDe	Indiv	30	23	..	...	41
Liberty, 3,598—Clay							
Missouri Odd Fellows Home Hospital	Inst	NPAssn	60	30	..	...	500
Marshall, 8,533—Saline							
Missouri State School—Epilepsy and Feebleminded	MeDe	State	1,831	1,655	..	...	137
Marthasville, 321—Warren							
Evangelical Emmaus Home for Epileptics and Feebleminded	MeDe	Church	100	95	..	...	4
Mountain Grove, 2,431—Wright							
Ryan Hospital	Gen	Indiv	10	3	5	40	100
Rolla, 5,141—Phelps							
Missouri School of Mines Hospital	Inst	State	20	1	..	...	60
St. Charles, 10,803—St Charles							
Evangelical Emmaus Home for Epileptics and Feebleminded	MeDe	Church	150	139	..	...	11

Key to symbols and abbreviations is on page 1091

MISSOURI—Continued

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
St. James, 1,812—Phelps							
State Federal Soldiers Home Hospital	Inst	State	58	28	..	...	77
St. Louis, 816,048—St. Louis City							
Booth Memorial Hospital	Mat	Church	60	38	40	392	570
City Infirmary	Inst	City	998	804	..	...	477
Hospital of Masonic Home	Inst	NPAssn	123	56	..	...	231
Mother of Good Counsel Home and Hospital	Conv	Church	85	70	..	...	184
St. Louis Training School	McDe	City	528	448	..	...	75
Valley Park, 2,091—St. Louis							
Ridge Farm	Unit of St. Louis Children's Hospital						

MONTANA

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Anaconda, 11,004—Deer Lodge							
St. Ann's Hospital▲	*Gen*	*Church*	80	53	18	291	1,586
Billings, 23,261—Yellowstone							
Billings Deaconess Hosp.▲◇	Gen	Church	78	70	25	537	3,528
St. Vincent Hospital▲◇	GenOrth	Church	169	137	28	679	5,176
Bozeman, 8,655—Gallatin							
Bozeman Deaconess Hosp.◇	Gen	Church	68	58	10	293	1,868
Browning, 1,825—Glacier							
Blackfeet Hospital	Gen	IA	45	25	8	112	822
Butte, 37,081—Silver Bow							
Murray Hospital★▲	Gen	Corp	160	75	20	145	2,431
St. James Hospital★▲◇	Gen	Church	160	122	30	694	3,666
Silver Bow County Hosp.	GenInst	County	125	81	8	16	330
Choteau, 1,181—Teton							
Choteau Hospital	Gen	Indiv	18	11	4	16	177
Conrad, 1,471—Pondera							
St. Mary's Hospital	Gen	Church	58	29	10	129	1,077
Crow Agency, 900—Big Horn							
Crow Agency Hospital	Gen	IA	36	11	4	64	679
Deer Lodge, 3,278—Powell							
Montana State Tuberculosis Sanitarium▲⊙	TB	State	250	228	..	...	249
St. Joseph Hospital	Gen	Church	35	29	10	84	501
Eureka, 912—Lincoln							
Clark's Hospital	Gen	Indiv	8	3	4	21	145
Forsyth, 1,096—Rosebud							
Rosebud Community Hosp.	Gen	Church	22	12	5	86	507
Fort Benton, 1,227—Chouteau							
St. Clare Hospital	Gen	Church	40	30	6	59	476
Fort Harrison 300—Lewis and Clark							
Veterans Admin. Hospital▲	Gen	Vet	178	127	..	...	1,208
Glasgow, 3,799—Valley							
Frances Mahon Deaconess Hospital	Gen	Church	60	32	15	223	1,450
Glendive, 4,524—Dawson							
Dawson County Hospital	GenInst	County	30	9	5	82	175
Northern *Pacific* Hospital▲	Gen	NPAssn	55	41	12	218	2,259
Great Falls, 29,928—Cascade							
Columbus Hospital▲◇	Gen	Church	235	170	50	780	6,451
Montana Deaconess Hosp.▲◇	Gen	Church	203	132	40	645	5,489
Hamilton, 2,332—Ravalli							
Marcus Daly Memorial Hosp.	*Gen*	*NPAssn*	32	18	13	167	864
Harlem, 1,166—Blaine							
Fort Belknap Indian Hospital and Sanitarium	Gen	IA	47	18	8	63	632
Havre, 6,427—Hill							
Kennedy Deaconess Hosp.▲	Gen	Church	60	37	14	175	1,892
Sacred Heart Hospital▲◇	Gen	Church	125	87	20	253	2,452
Helena, 15,056—Lewis and Clark							
St. John Hospital▲◇	Gen	Church	83	60	20	185	1,610
St. Peter's *Hospital*▲	*Gen*	NPAssn	60	45	14	204	1,872
Shodair Crippled Children's Hospital▲⊙	Orth	NPAssn	35	28	..	...	208
Jordan, 500—Garfield							
Lutheran Good Samaritan Hospital	Gen	Church	20	14	4	40	197
Kalispell, 8,245—Flathead							
Kalispell General Hospital▲	Gen	Church	41	33	12	304	2,032
Hosp.	Gen	IA	47	17	6	31	634
St. Joseph's *Hospital*▲◇	Gen	Church	115	77	16	285	3,097
Libby, 1,837—Lincoln							
St. John Lutheran Hospital	Gen	Church	16	10	4	85	425
Livingston, 6,642—Park							
Park Hospital	Gen	Indiv	27	17	6	119	592
Miles City, 7,313—Custer							
Miles City Hospital (Holy Rosary Hospital)▲◇	Gen	Church	120	98	15	318	3,631
Missoula, 18,449—Missoula							
Northern Pacific Hospital▲	Indus	NPAssn	85	62	..	...	2,346
St. Patrick Hospital▲◇	Gen	Church	128	120	20	562	4,594
Thornton Hospital▲	Gen	Part	35	29	12	211	1,635
Plentywood, 1,574—Sheridan							
Sheridan Memorial Hospital	Gen	NPAssn	18	12	6	103	654
Poplar, 1,442—*Roosevelt*							
Fort Peck Indian Agency *Hospital*	Gen	IA	23	13	7	87	510
Roundup, 2,644—Musselshell							
Musselshell Valley Hospital	Gen	Indiv	20	8	6	65	750
St. Ignatius, 763—Lake							
Holy Family Hospital	Gen	Church	42	17	6	70	618
Sidney, 2,978—Richland							
Sidney Deaconess Hospital	Gen	Church	30	24	12	174	1,175
Terry, 1,012—Prairie							
Lutheran Good Samaritan Hospital	Gen	Church	15	4	6	20	183
Townsend, 1,309—Broadwater							
Broadwater *Hospital*	*Gen*	Corp	28	20	5	84	574
Warmsprings, 1,900—Deer Lodge							
Montana State Hospital⊙	Ment	State	1,920	1,879	..	...	898
Whitefish, 2,602—*Flathead*							
Whitefish Hospital	Gen	Indiv	17	14	6	95	650
Wolf Point, 1,960—Roosevelt							
Lutheran Trinity *Hospital*	*Gen*	*NPAssn*	19	12	6	99	473

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Columbus, 962—Stillwater							
Stillwater Community Hosp.	Gen	Church	18	10	4	61	691
Great Falls, 29,928—Cascade							
County Isolation Hospital	Iso	County	25	7	..	...	214
Helena, 15,056—*Lewis and Clark*							
Lewis and Clark County Hospital	GenInst	County	100	60	3	1	151
Polson, 2,156—Lake							
Hotel Dieu Hospital	Gen	*Church*	20	13	5	60	450
Scobey, 1,311—Daniels							
Scobey Clinic Hospital	Gen	*Indiv*	15	10	3	37	225

NEBRASKA

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Ainsworth, 1,833—Brown							
Ainsworth Hospital	Gen	Part	24	14	5	151	974
Alliance, 6,253—Box Butte							
St. Joseph's *Hospital*▲◇	*Gen*	*Church*	114	81	22	309	2,525
Auburn, 3,659—Nemaha							
Auburn Hospital	Gen	Indiv	16	8	6	108	447
Tushla General Hospital	Gen	Indiv	15	3	5	...	135
Aurora, 2,419—Hamilton							
Aurora Hospital	Gen	Part	31	15	10	104	574
Bassett, 931—Rock							
Bassett Hospital	Gen	Part	12	8	6	65	429
Beatrice, 10,883—*Gage*							
Lutheran Hospital	Gen	Church	65	52	16	261	1,459
Mennonite Deaconess Home and Hospital	Gen	Church	30	32	10	172	1,049
Benkelman, 1,448—*Dundy*							
Morehouse Hospital	Gen	Indiv	10	8	4	55	413
Blair, 3,289—Washington							
Blair Hospital	Gen	Indiv	14	10	3	116	422
Broken Bow, *2,968—Custer*							
Broken Bow Hospital	Gen	Indiv	35	20	7	45	745
Cambridge, 1,084—Furnas							
Republican Valley Hospital	Gen	Indiv	25	8	3	56	216
Chadron, 4,262—Dawes							
Chadron Municipal Hospital	Gen	City	25	13	7	112	529
Columbus, 7,632—Platte							
Lutheran Hospital	Gen	Church	30	14	7	140	462
St. Mary's *Hospital*▲	Gen	Church	135	75	15	261	2,072
Dalton, 358—Cheyenne							
Pioneer Memorial Hospital	Gen	Indiv	10	5	4	55	312
David City, 2,272—Butler							
David City Hospital	Gen	NPAssn	16	12	8	134	359
Fairbury, 6,304—Jefferson							
Fairbury Hospital	Gen	Indiv	19	11	6	131	693
Falls City, 6,146—Richardson							
Our Lady of Perpetual Help Hospital	Gen	Church	27	19	8	201	611
Fort Crook, —Sarpy							
Station Hospital▲	Gen	*Army*	50	32	..	...	693
Fremont, 11,862—Dodge							
Dodge County *Hospital*	*Gen*	County	60	41	13	452	1,635
Friend, 1,169—Saline							
Warren Memorial *Hospital*	Gen	City	19	14	7	101	175
Genoa, 1,231—*Nance*							
Emergency Hospital	Gen	Indiv	5	2	3	35	95
Genoa Hospital	Gen	Indiv	10	5	3	32	176
Gordon, *1,967—Sheridan*							
City Hospital	Gen	Indiv	9	1	6	112	292
Grand Island, 19,130—Hall							
Grand Island Lutheran *Hosp.*	*Gen*	Church	40	25	14	210	1,262
St. *Francis* Hospital▲◇	Gen	Church	141	111	24	540	3,415
Hastings, 15,145—Adams							
Mary Lanning Memorial Hospital▲◇	Gen	NPAssn	90	88	25	848	2,970
Hebron, 1,909—Thayer							
Blue Valley Hospital	Gen	Indiv	20	..*No data supplied*			
Holdrege, *3,360*—Phelps							
Brewster Hospital	Gen	Part	31	20	15	208	1,418
Holdrege *Hospital*	*Gen*	*Indiv*	*20*	*12*	*5*	*65*	*5[illegible]6*
Humboldt, 1,3[illegible]6—Richardson							
Humboldt Hospital	Gen	Indiv	16	12	6	102	492
Imperial, 1,195—Chase							
Imperial Community Hosp.	Gen	NPAssn	18	11	5	111	789
Ingleside, 1,000—Adams							
Hastings State Hospital+▲⊙	Ment	State	1,700	1,701	..	...	122
Kearney, 9,643—Buffalo							
Good Samaritan *Hospital*▲	Gen	Church	60	40	20	519	2,635
Nebraska Hospital for the Tuberculous▲	TB	State	200	141	..	...	172

Key to symbols and abbreviations is on page 1091

NEBRASKA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Lewellen, 532—Garden							
Lewellen Community Hosp...	Gen	NPAssn	16	10	4	88	631
Lexington, 3,688—Dawson							
Lexington Community Hosp.	Gen	Corp	22	14	9	296	831
Lincoln, 81,984—Lancaster							
Bryan Memorial Hospital★▲○	Gen	Church	110	91	24	399	2,781
Green Gables, Dr. Benj. F. Bailey Sanatorium	GenN&M	Corp	115	98	4	...	212
Lincoln General Hospital★▲○	Gen	NPAssn	183	154	40	791	5,649
Lincoln State Hospital▲......	Ment	State	1,500	1,460	..	...	263
Nebraska Orthopedic Hosp.+▲	Orth	State	110	88	..	...	656
St. Elizabeth Hospital★▲○...	Gen	Church	200	171	30	911	6,252
Veterans Admin. Center▲....	Gen	Vet	311	216	..	...	2,494
Loup City, 1,675—Sherman							
Loup City Hospital..........	Gen	Church	17	15	8	145	532
Lynch, 487—Boyd							
Sacred Heart Hospital......	Gen	Church	21	11	6	92	481
McCook, 6,212—Red Willow							
St. Catherine of Sienna Hospital▲	Gen	Church	50	45	16	425	1,633
Nebraska City, 7,339—Otoe							
St. Mary's Hospital▲	Gen	Church	58	39	16	297	1,811
Norfolk, 10,490—Madison							
Lutheran Hospital	Gen	Church	60	41	15	347	1,834
Norfolk State Hospital+▲....	Ment	State	1,120	1,154	..	...	163
Our Lady of Lourdes Hosp...	Gen	Church	34	32	12	237	1,348
Verges Sanitarium	Gen	Indiv	30	15	8	73	372
North Platte, 12,429—Lincoln							
North Platte Memorial Hosp.	Gen	NPAssn	35	..	10	Estab. 1945	
St. Mary Hospital▲...........	Gen	Church	70	46	17	371	1,941
Oakland, 1,380—Burt							
Oakland Community Hosp..	Gen	NPAssn	12	6	5	108	356
Odell, 404—Gage							
Odell General Hospital.......	Gen	Indiv	11	10	5	60	404
Omaha, 223,844—Douglas							
Bishop Clarkson Memorial Hospital★+▲○	Gen	Church	145	141	17	448	5,123
Creighton Memorial St. Joseph's Hospital★+▲○	Gen	Church	452	391	62	1,508	12,145
Doctors Hospital	Gen	NPAssn	107	88	16	375	4,188
Douglas County Hospital+▲⊙	Gen	County	350	278	..	...	1,546
Douglas County Psychiatric Hospital	Unit of Douglas County Hospital						
Immanuel Deaconess Institute★▲○	Gen	Church	115	119	40	787	4,201
Lutheran Hospital▲⊙	Gen	Church	130	99	16	284	3,562
Nebraska Methodist Hospital and Deaconess Home★▲○...	Gen	Church	156	128	24	767	5,432
St. Catherine's Hospital★▲○	Gen	Church	165	144	36	633	5,303
University of Nebraska Hospital★+▲○	Gen	State	210	165	20	282	2,681
Ord, 2,240—Valley							
Ord Hospital	Gen	Indiv	17	14	4	52	415
Pawnee City, 1,647—Pawnee							
Pawnee Hospital and Maternity Annex	Gen	Indiv	26	14	6	106	493
Pender, 1,135—Thurston							
Logan Valley Hospital	Gen	Indiv	12	9	6	50	150
Rushville, 1,125—Sheridan							
Rushville Hospital	Gen	Indiv	10	5	4	52	380
Scottsbluff, 12,057—Scotts Bluff							
St. Mary Hospital...........	Gen	Church	41	32	10	243	3,091
West Nebraska Methodist Hospital○	Gen	Church	75	48	20	489	2,550
Seward, 2,826—Seward							
Seward Hospital	Gen	Indiv	10	6	6	116	200
Sidney, 3,388—Cheyenne							
Roche Hospital	Gen	Part	18	15	4	57	574
Taylor Hospital	Gen	Part	20	13	10	169	799
Stratton, 630—Hitchcock							
Stewart Hospital	Gen	Indiv	12	8	3	50	293
Stromsburg, 1,127—Polk							
Stromsburg Hospital	Gen	Indiv	15	9	7	92	459
Stuart, 760—Holt							
Wilson Hospital	Gen	Indiv	20	9	3	60	320
Superior, 2,650—Nuckolls							
Brodstone Memorial Hosp...	Gen	NPAssn	20	11	6	93	500
Tecumseh, 2,104—Johnson							
Tecumseh Hospital	Gen	Indiv	13	8	4	138	299
Valentine, 2,188—Cherry							
General Hospital	Gen	Indiv	16	12	8	149	869
Wahoo, 2,618—Saunders							
Wahoo Community Hospital.	Gen	Part	20	11	10	146	643
Winnebago, 800—Thurston							
Winnebago Indian Hospital	Gen	IA	54	18	9	82	602
York, 5,383—York							
York General Hospital.......	Gen	NPAssn	50	34	6	313	1,453

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Beatrice, 10,883—Gage							
Beatrice State Home.........	MeDe	State	1,521	1,330	29	...	103
Lincoln, 81,984—Lancaster							
Nebraska State Penitentiary Hospital	Inst	State	25	8	..	...	432
Milford, 739—Seward							
Nebraska Industrial Home...	Inst	State	18	2	12	47	47
Omaha, 223,844—Douglas							
Bramwell Booth Convalescent Hospital	Conv	Church	46	26	..	...	175
Salvation Army Booth Memorial Hospital	Mat	Church	77	.. No data supplied			
Orchard, 493—Antelope							
Orchard Hospital	Gen	Indiv	10	1	3	28	100
Plainview, 1,411—Pierce							
Plainview General Hospital..	Gen	Corp	10	5	5	142	241
Sutherland, 862—Lincoln							
Sutherland Hospital	Gen	NPAssn	14	9	6	99	801
Tilden, 984—Madison							
Barr Memorial Hospital......	Gen	Indiv	17	11	9	148	542
Walthill 1,204—Thurston							
Dr. Picotte Memorial Hosp...	Gen	Indiv	12	3	4	15	50
Westpoint, 2,510—Cuming							
St. Joseph Home and Hospital	GenInst	Church	28	16	6	159	754

NEVADA

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Boulder City, 3,000—Clark							
Boulder City Hospital.......	Gen	USPHS	23	10	6	104	615
Caliente, 1,800—Lincoln							
Lincoln County Hospital....	Gen	County	27	13	7	77	371
East Ely, 750—White Pine							
Steptoe Valley Hospital▲....	Gen	NPAssn	40	13	7	138	416
Elko, 4,094—Elko							
Elko General Hospital▲......	Gen	County	50	22	12	117	773
Henderson, 6,500—Clark							
Basic Magnesium Hospital...	Gen	NPAssn	60	27	14	176	1,422
Las Vegas, 8,422—Clark							
Las Vegas Hospital..........	Gen	Part	55	32	12	174	1,433
Owyhee, 100—Elko							
Western Shoshone Hospital..	Gen	IA	20	10	4	23	208
Reno, 21,317—Washoe							
Nevada State Hospital for Mental Diseases	Ment	State	370	428	..	...	73
St. Mary's Hospital▲	Gen	Church	75	67	15	436	2,702
Veterans Admin. Center▲.....	Gen	Vet	31	27	..	...	515
Washoe County General Hospital	Gen	County	237	218	18	480	4,268
Schurz, 100—Mineral							
Walker River Indian Hosp...	Gen	IA	34	28	3	68	482
Winnemucca, 2,485—Humboldt							
Humboldt County General Hospital	Gen	County	72	33	14	53	1,197

NEW HAMPSHIRE

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Berlin, 19,084—Coos							
St. Louis Hospital▲○........	Gen	Church	91	71	14	291	2,797
Claremont, 12,144—Sullivan							
Claremont General Hospital▲	Gen	NPAssn	59	37	20	239	1,397
Concord, 27,171—Merrimack							
Margaret Pillsbury General Hospital▲○	Gen	NPAssn	90	61	12	168	2,003
New Hampshire Memorial Hospital▲○	Gen	NPAssn	75	64	16	390	2,317
New Hampshire State Hospital+▲○	Ment	State	2,433	2,330	..	...	751
Pembroke Sanatorium	TB	Corp	100	38	..	...	55
Dover, 14,990—Strafford							
Wentworth Hospital▲○	Gen	City	69	44	15	287	1,708
East Derry, —Rockingham							
Alexander-Eastman Hospital	Gen	NPAssn	23	11	6	121	488
Epping, 1,618—Rockingham							
Rockingham County Home and Hospital	InstGen	County	110	57	12	1	183
Exeter, 5,398—Rockingham							
Exeter Hospital▲	Gen	NPAssn	73	41	22	408	1,843
Franklin, 6,749—Merrimack							
Franklin Hospital▲	Gen	NPAssn	50	21	15	149	962
Glencliff, 200—Grafton							
New Hampshire State Sanat.▲	TB	State	140	88	..	...	82
Grasmere, 200—Hillsboro							
Hillsborough County General Hospital▲○	Gen	County	128	63	14	121	1,158
Hanover, 3,425—Grafton							
Mary Hitchcock Memorial Hospital★+▲○	Gen	NPAssn	178	152	18	392	4,362
Keene, 13,832—Cheshire							
Elliot Community Hospital▲○	Gen	NPAssn	89	58	20	410	2,121
Laconia, 13,484—Belknap							
Laconia Hospital▲○	Gen	NPAssn	96	81	25	426	2,563
Lancaster, 3,095—Coos							
Lancaster Hospital	Gen	NPAssn	20	14	4	107	575
Lebanon, 7,590—Grafton							
Alice Peck Day Memorial Hospital	Gen	NPAssn	21	20	12	186	573
Littleton, 4,571—Grafton							
Littleton Hospital	Gen	NPAssn	35	21	12	140	704
Manchester, 77,685—Hillsboro							
Balch Hospital	Unit of Elliot Hospital						
Elliot Hospital+▲○	Gen	NPAssn	125	78	32	812	2,997
Notre Dame de Lourdes Hospital▲○	Gen	Church	100	77	20	437	2,917
Our Lady of Perpetual Help Maternity Hospital	Unit of Sacred Heart Hospital						
Sacred Heart Hospital+▲○....	Gen	Church	152	107	24	327	2,896
Nashua, 32,927—Hillsboro							
Nashua Memorial Hospital▲○	Gen	NPAssn	84	67	16	287	2,274
St. Joseph's Hospital▲○.....	Gen	Church	89	75	18	408	2,623

NEW HAMPSHIRE—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
New London, 1,039—Merrimack							
New London Hospital	Gen	NPAssn	25	9	4	37	418
Newport, 5,304—Sullivan							
Carrie F Wright Hospital	Gen	NPAssn	25	13	9	93	323
North Conway, 960—Carroll							
Memorial Hospital	*Gen*	*NPAssn*	*37*	*20*	*10*	*109*	*760*
Peterborough, 2,470—Hillsboro							
Peterborough Hospital▲	Gen	NPAssn	40	30	10	138	983
Plymouth, 2,533—Grafton							
Sceva Speare Memorial Hospital	Gen	NPAssn	34	23	8	92	775
P[illegible]							
[illegible]▲	Gen	NPAssn	117	77	25	585	3,125
[illegible]▲	*Gen*	*Navy*	*414*	*391*	*10*	*194*	*3,242*
Rochester, 12,012—Strafford							
Frisbie Memorial Hospital	Gen	NPAssn	60	50	20	530	2,708
West Stewartstown, 350—Coos							
Coos County Hospital	Gen	County	50	17	8	87	512
Whitefield, 1,834—Coos							
Morrison Hospital	GenN&M	NPAssn	56	10	9	32	126
Wolfeboro, 2,636—Carroll							
Huggins Hospital▲	Gen	NPAssn	36	25	6	80	782
Woodsville, 1,900—Grafton							
Cottage Hospital	Gen	NPAssn	23	17	8	169	613
Grafton County Hospital	InstGen	County	30	23	4	4	125

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Exeter, 5,398—Rockingham							
Lamont Infirmary	Inst	NPAssn	53	10	..	...	689
Laconia, 13,484—Belknap							
Laconia State School	MeDe	State	620	698	..	..	61
Manchester, 77,685—Hillsboro							
Manchester Isolation Hosp	Iso	City	61	6	..	..	127

NEW JERSEY

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Allentown, 766—Monmouth							
Dr. Farmer's Private Hosp	Gen	Indiv	40	23	11	126	804
Allenwood, 150—Monmouth							
Allenwood Sanatorium (Monmouth County Hospital for Tuberculosis)	TB	County	100	77		...	96
Atlantic City, 64,094—Atlantic							
Atlantic City Hospital★+▲○	Gen	NPAssn	260	201	40	1,331	6,125
Children's Seashore House at Atlantic City for Invalid Children	*Orth*	*NPAssn*	*146*	*67*	..	...	*271*
Municipal Hospital	Iso	City	65	5	..	..	84
U. S. Naval Air Station Dispensary	Gen	Navy	75	20	..	...	21
Bayonne, 79,198—Hudson							
Bayonne Hospital and Dispensary★+▲○	Gen	NPAssn	250	135	30	918	5,077
Swiney Sanatorium	Gen	Indiv	16	7	6	83	266
Beach Haven, 746—Ocean							
Seashore Branch of Babies' Hospital	Unit of *Babies' Hospital, Philadelphia, Pa.*						
Bellemead, 51—Somerset							
Belle Mead Sanatorium and Farm	N&M	Corp	65	50	..	...	90
Belleville, 28,167—Essex							
Essex *County* Hospital for Contagious Diseases+▲○	Iso	*County*	*300*	*110*	..	...	2,349
Bound Brook, 7,616—Somerset							
Bound Brook Hospital▲	Gen	NPAssn	34	22	10	100	729
Bridgeton, 15,992—Cumberland							
[illegible]	Conv	Indiv	25	23	..	...	34
[illegible]	TB	NPAssn	96	90	..	...	65
Camden, 11[illegible]—Camden							
Camden General Hospital	Gen	NPAssn	30	21	18	289	1,003
Cooper Hospital★+▲○	Gen	NPAssn	351	292	56	2,520	8,702
Marion Childs Hospital for Children	Unit of West Jersey Homeopathic Hosp						
Municipal Hospital for Contagious Diseases	Iso	City	100	20	.	...	319
West Jersey Homeopathic Hospital★+▲○	Gen	NPAssn	262	160	63	1,192	5,119
Cape May, 2,589—Cape May							
U S Naval Air Station Dispensary	Gen	Navy	60	11	..	..	14
Cedar Grove, 2,000—Essex							
Essex County Hospital▲○	Ment	County	2,643	2,432	..	...	711
Dover, *10,491—Morris*							
Dover General Hospital▲	Gen	NPAssn	108	85	27	632	2,735
East Orange, 68,945—Essex							
East *Orange* General Hospital★▲○	Gen	NPAssn	120	80	30	710	2,881
[illegible]pital★▲	Gen	*Church*	*163*	*133*	..	...	2,714
Elizabeth General Hospital and Dispensary★▲○	Gen	NPAssn	197	169	40	1,325	4,751
[illegible] Hospital★▲○	Gen	Church	216	157	41	1,130	4,119
[illegible]	Gen	NPAssn	196	136	42	1,177	5,032
[illegible]outh							
[illegible]▲	Gen	Army	54	18	4	21	830
Franklin, 4,00[illegible]							
Franklin Hospital▲	Gen	NPAssn	37	28	7	191	987
Glen Gardner, 536—Hunterdon							
New Jersey Sanatorium for *Tuberculous Diseases*+▲	TB	State	474	386	..	...	297
Grenloch, 800—Camden							
Camden County General Hosp.	*Gen*	*County*	*250*	*119*	..	...	*532*
Camden County Hospital for *Mental Diseases*	Ment	County	750	740	..	...	137
Camden County Tuberculosis Hospital	TB	County	220	146	..	...	193
Greystone Park, —Morris							
New Jersey State Hosp +▲○	*Ment*	State	6,507	5,580	..	..	1,926
Hackensack, *26,279—Bergen*							
Hackensack Hospital★▲○	*Gen*	NPAssn	230	249	50	1,577	9,360
Hasbrouck Heights, *6,716—Bergen*							
Hasbrouck Heights Hospital	Orth	NPAssn	31	23	..	...	596
Hoboken, 50,115—Hudson							
St. Mary's Hospital★▲○	Gen	Church	421	226	29	685	5,830
Irvington, 55,328—Essex							
Irvington General Hospital▲	Gen	City	115	73	20	623	2,900
Jersey City, 301,173—*Hudson*							
Christ Hospital★▲○	Gen	Church	210	207	45	891	5,685
Fairmount Hospital	*Gen*	*NPAssn*	*60*	*47*	*15*	*225*	*1,611*
Greenville Hospital○	*Gen*	*NPAssn*	*60*	*57*	*16*	*161*	*1,016*
Hudson County Tuberculosis Hospital+▲	TB	County	477	404	.	. .	576
Jersey City Hospital★+▲○	Gen	City	*900*	825	..	.	18,865
Jersey City Hospital for Communicable Diseases▲	Unit of *Jersey City Hospital*						
Margaret Hague Maternity Hospital+▲○	Mat	*County*	*345*	*217*	*385*	*6,276*	*7,515*
Psychopathic Hospital	Unit of Jersey City Hospital						
St Francis Hospital★▲○	*Gen*	*Church*	*228*	*152*	..	...	*4,230*
Kearny (Arlington P O), 39,467—Hudson							
West Hudson Hospital▲	Gen	NPAssn	64	43	20	500	2,245
Lakehurst, 827—Ocean							
U S Naval Air Station *Dispensary*	Gen	Navy	14	6	6	150	311
Lakewood, 8,000—Ocean							
Paul Kimball Hospital▲	*Gen*	*NPAssn*	*65*	*65*	*12*	317	1,960
Long Branch, 17,408—Monmouth							
Dr. E C Hazard Hospital	Gen	NPAssn	95	*69*	*30*	340	*3,650*
Monmouth Memorial Hospital★+▲○	Gen	*NPAssn*	254	*217*	*42*	*1,050*	*7,088*
Lyons, —Somerset							
Veterans Admin Hospital▲	Ment	Vet	2,741	1,882	..	...	1,385
Marlboro, 500—Monmouth							
New Jersey State Hospital+▲	Ment	State	2,910	2,752	..	...	650
Metuchen, 6,557—Middlesex							
Roosevelt Hospital▲	TB	County	221	184	..	...	*192*
Millville, 14,806—Cumberland							
Millville Hospital	Gen	NPAssn	*54*	*34*	*11*	*300*	1,220
[illegible]							
[illegible]p▲	Gen	NPAssn	56	40	20	432	*[illegible]*
[illegible]▲	Gen	NPAssn	399	178	*39*	*1,161*	*6,511*
[illegible]▲	*Gen*	Church	51	41	12	293	*1,352*
Victoria Foundation	Card	NPAssn	21	20	..	...	20
Morristown, 15,270—Morris							
All Souls Hospital★○	Gen	Church	125	64	[illegible]	681	2,653
Aurora Institute	Conv	Corp	90	43		.	582
Morristown Memorial Hosp★	*Gen*	*NPAssn*	*188*	*85*	*18*	*419*	*2,920*
Shongum Mountain Sanat	TB	County	76	47	..	.	56
Mount Holly, 6,573—Burlington							
[illegible] Hosp★+▲	Gen	NPAssn	127	*65*	*18*	*568*	*2,092*
[illegible]★▲○	*Gen*	*NPAssn*	*150*	123	*39*	*1,026*	*4,622*
Newark, 429,760—Essex							
American Legion Memorial *Hospital*	Gen	NPAssn	35	31	13	267	1,272
Babies' Hospital Coit Memorial+▲○	Chil	NPAssn	70	[illegible]		.	1,830
Columbus Hospital	Gen	NPAssn	75	[illegible]	[illegible]	974	3,122
Community Hospital▲	Gen	NPAssn	26	14	4	150	691
Hospital and Home for Crippled Children+▲	Orth	NPAssn	110	54	.	. .	258
Hospital of St. Barnabas and for Women and Children★▲○	Gen	Church	225	161	45	993	5,921
Newark Beth Israel Hosp★+▲○	Gen	NPAssn	505	[illegible]	76	2,318	10,733
Newark City Hospital★+▲○	Gen	City	700	557	40	971	[illegible]
Newark Eye and Ear Infirmary+▲	ENT	NPAssn	65	35		.	[illegible]
Newark Memorial Hosp★▲○	Gen	NPAssn	101	77	26	[illegible]	[illegible]
Presbyterian Hospital▲○	Gen	NPAssn	*271*	*211*	*65*	*2,022*	[illegible]
St James Hospital★▲○	Gen	Church	127	77	23	481	[illegible]
St Michael's Hospital★▲○	Gen	Church	350	310	70	[illegible]	[illegible]
N[illegible]							
[illegible]▲	Gen	NPAssn	100	71	23	[illegible]	[illegible]
[illegible]▲	Gen	Church	[illegible]	155	48	1,210	5,011
N[illegible]							
Fairview Sanatorium	*TB*	County	112	*91*	..	...	[illegible]
Newton, 5,533—*Sussex*							
Newton Memorial Hospital▲	Gen	NPAssn	*42*	*41*	*9*	[illegible]	[illegible]
Northfield, 2,848—Atlantic							
Atlantic County *Hospital for Mental Diseases*	Ment	County	475	[illegible]	..	...	116
Atlantic County Hospital for Tuberculous Diseases▲	TB	County	*89*	*32*	..	...	*58*
Orange, 35,717—Essex							
New Jersey Orthopaedic Hospital and Dispensary+▲	Orth	NPAssn	41	35	.	...	[illegible]
Orange Memorial Hospital★▲○	Gen	NPAssn	[illegible]	[illegible]	75	1,614	[illegible]
St Mary's Hospital★○	Gen	Church	125	103	[illegible]	673	2,976

Key to symbols and abbreviations is on page 1091

NEW JERSEY—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Passaic, 61,394—Passaic							
Beth Israel Hospital	Gen	NPAssn	77	52	22	429	2,061
Passaic General Hospital★▲○	Gen	NPAssn	225	179	65	1,742	5,751
St. Mary's Hospital★▲○	Gen	Church	190	186	50	1,198	6,233
Paterson, 139,656—Passaic							
Nathan and Miriam Barnert Memorial Hospital★▲○	Gen	NPAssn	116	98	29	890	3,561
Paterson General Hosp.★▲○	Gen	NPAssn	384	218	84	1,685	7,365
St. Joseph Hospital★▲○	Gen	Church	390	325	78	1,571	7,636
Valley View Sanatorium▲	TB	County	234	218	..	...	206
Perth Amboy, 41,242—Middlesex							
Perth Amboy General Hospital★▲○	Gen	NPAssn	163	142	34	1,036	5,405
Pinewald (Bayville P. O.), —Ocean							
Royal Pines Hospital	Gen	NPAssn	85	20	12	31	288
Plainfield, 37,469—Union							
Muhlenberg Hospital★▲○	Gen	NPAssn	270	203	60	1,750	7,164
Point Pleasant, 2,082—Ocean							
Point Pleasant Hospital▲	Gen	NPAssn	48	30	10	174	931
Preakness (Mountain View P. O.),—Passaic							
Hope Dell Hospital	Gen	County	125	128	..	...	180
Princeton, 7,719—Mercer							
Isabella McCosh Infirmary of Princeton University	Inst	NPAssn	55	16	..	...	1,111
Princeton Hospital▲	Gen	NPAssn	85	59	17	362	1,949
Rahway, 17,498—Union							
New Jersey Reformatory Hospital	Inst	State	18	4	..	...	211
Rahway Hospital▲	Gen	NPAssn	80	60	20	681	2,365
Red Bank, 10,974—Monmouth							
Riverview Hospital	Gen	NPAssn	40	28	15	324	1,015
Ridgewood, 14,948—Bergen							
Bergen Pines, Bergen County Hospital▲	TbIso	County	476	222	..	...	724
Riverside, 4,000—Burlington							
Zurbrugg Memorial Hospital▲	Gen	NPAssn	41	25	15	322	1,470
Scotch Plains, 3,500—Union							
Bonnie Burn Sanatorium▲	TB	County	428	321	..	...	316
Secaucus, 9,754—Hudson							
Hudson County Contagious Disease Hospital▲	Iso	County	176	30	..	...	511
Hudson County General Hosp.	Gen	County	224	172	..	...	89
Hudson County Hospital for Mental Diseases▲	Ment	County	1,993	1,791	..	...	369
Skillman, 23—Somerset							
New Jersey State Village for Epileptics	Epil	State	1,431	1,446	..	...	82
Somers Point, 1,992—Atlantic							
Shore Memorial Hospital▲	Gen	NPAssn	65	38	14	147	1,107
Somerville, 8,720—Somerset							
Somerset Hospital▲○	Gen	NPAssn	96	95	20	895	4,361
South Amboy, 7,802—Middlesex							
South Amboy Memorial Hospital	Gen	NPAssn	35	27	16	225	945
Summit, 16,165—Union							
Fair Oakes Sanatorium	NervConv	Corp	42	29	..	...	176
Overlook Hospital○	Gen	NPAssn	158	130	41	808	4,021
Sussex, 1,478—Sussex							
Alexander Linn Hospital	Gen	NPAssn	23	15	8	75	401
Teaneck, 25,275—Bergen							
Holy Name Hospital★▲○	Gen	Church	185	178	50	1,433	4,952
Trenton, 124,697—Mercer							
F. W. Donnelly Memorial Hospitals	TbIso	City	420	270	..	...	497
Glenwood Sanitarium	N&M	Indiv	25	20	..	...	84
Mercer Hospital★▲○	Gen	NPAssn	240	178	44	1,412	6,032
New Jersey State Hosp.+▲⊙	Ment	State	3,000	3,054	..	...	1,009
New Jersey State Prison Hospital▲	Inst	State	42	31	..	...	951
Orthopaedic Hospital and Dispensary+	Orth	NPAssn	45	26	..	...	221
St. Francis Hospital★○	Gen	Church	300	242	55	1,396	7,918
Trenton General Hospital	Gen	NPAssn	52	37	13	207	1,147
William McKinley Memorial Hospital★▲○	Gen	NPAssn	128	112	26	784	3,076
Union City, 56,173—Hudson							
Union City General Hospital	Gen	NPAssn	40	15	10	61	780
Verona, 8,957—Essex							
Essex Mountain Sanat.+▲	TB	County	446	301	..	...	394
Vineland, 7,914—Cumberland							
Newcomb Hospital▲	Gen	NPAssn	85	51	20	391	1,834
Weehawken (Union City P. O.), 14,363—Hudson							
North Hudson Hospital★▲	Gen	NPAssn	166	76	25	435	2,663
Westfield, 18,458—Union							
Children's Country Home▲	Orth	NPAssn	50	34	..	...	86
Woodbury, 8,306—Gloucester							
Underwood Hospital▲	Gen	NPAssn	65	49	30	656	2,851
Wyckoff, 500—Bergen							
Christian Sanatorium	N&M	NPAssn	165	157	..	...	94

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Caldwell, 4,932—Essex							
Theresa Grotta Home for Convalescents	CardConv	NPAssn	40	30	..	...	236
Farmingdale, 699—Monmouth							
Tuberculosis Preventorium for Children	TB	NPAssn	236	146	..	...	424
Haddonfield, 9,742—Camden							
Bancroft School	MeDe	NPAssn	100	100	..	...	11
Jamesburg, 2,128—Middlesex							
New Jersey State Home for Boys	Inst	State	25	11	..	...	697
Jersey City, 301,173—Hudson							
Salvation Army Door-of-Hope Home and Hospital	Mat	Church	61	53	6	56	148
Little Falls, 5,000—Passaic							
North Jersey Training School	MeDe	State	54	28	..	...	1,004
Longport, 303—Atlantic							
Betty Bacharach Home for Afflicted Children	Orth	NPAssn	100	...	..	...	...
Maplewood, 23,139—Essex							
Newark City Almshouse	Inst	City	100	96	..	...	166
Menlo Park, 400—Middlesex							
New Jersey Home for Disabled Soldiers	Inst	State	100	66	..	...	35
Newark, 429,760—Essex							
Florence Crittenton Home	Mat	NPAssn	27	27	30	61	98
Newark Convalescent Hosp.	Conv	City	150	142	..	...	76
New Brunswick, 33,180—Middlesex							
Mary Kingsland Macy Willets Infirmary	Inst	NPAssn	22	7	..	...	155
Rutgers University Infirmary	Inst	NPAssn	11	3	..	...	307
Newfoundland, 565—Morris							
Idylease Sanatorium	TB	Corp	50	...	..	...	...
New Lisbon, 213—Burlington							
Burlington County Hospital for the Insane	Ment	County	300	215	..	...	71
New Jersey State Colony	MeDe	State	600	757	..	...	102
Paterson, 139,656—Passaic							
Paterson City Hospital	ChrIso	City	110	52	..	...	164
Roseland, 1,556—Essex							
Mountain View Rest	N&M	Corp	20	19	..	...	10
Sea Isle City, 773—Cape May							
Sea Isle Hospital and Training School	MeDe	Corp	83	65	..	...	15
Trenton, 124,697—Mercer							
State Home for Girls	Inst	State	70	45	3	...	278
Upper Montclair, —Essex							
Montclair Sanitarium	Conv	Part	10	8	..	...	22
Vineland, 7,914—Cumberland							
Maplehurst School	MeDe	Indiv	20	19	..	...	1
New Jersey Memorial Home for Disabled Soldiers, Sailors, Marines and Their Wives and Widows	Inst	State	62	20	..	...	121
Training School at Vineland	MeDe	NPAssn	568	.. No data supplied			
Vineland State School	MeDe	State	1,702	1,630	..	...	106
Westfield, 18,458—Union							
Brookside Nursing Home	Conv	Indiv	30	30	..	...	26
Woodbine, 2,111—Cape May							
State Colony for Feebleminded Males	MeDe	State	823	731	..	...	82

NEW MEXICO

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Albuquerque, 35,449—Bernalillo							
Albuquerque, Indian Sanat.▲	TB	IA	100	77	..	...	111
Atchison, Topeka and Santa Fe Hospital	Indus	NPAssn	67	44	..	...	523
Indian General Hospital▲	Gen	IA	69	36	8	102	997
Methodist Sanatorium	TB	Church	65	58	..	...	93
Nazareth Sanatorium	N&M	Church	25	20	..	...	188
St. Joseph Sanatorium and Hospital▲○	GenTb	Church	185	121	30	915	4,255
Southwestern Presbyterian Sanatorium▲	GenTb	Church	158	135	22	674	3,278
Veterans Admin. Center▲	Gen	Vet	306	242	..	...	1,697
Artesia, 4,071—Eddy							
Artesia Municipal Hospital	Gen	Church	25	12	8	210	987
Black Rock (Zuni P. O.), —McKinley							
Zuni Indian Hospital	Gen	IA	42	14	8	24	543
Carlsbad, 7,116—Eddy							
Carlsbad Memorial Hospital	Gen	NPAssn	25	21	9	191	1,514
St. Francis Xavier Hospital	Gen	Church	45	36	12	474	2,028
Clayton, 3,188—Union							
St. Joseph Hospital	Gen	Church	21	12	8	139	570
Clovis, 10,065—Curry							
Atchison, Topeka and Santa Fe Hospital	Indus	NPAssn	37	17	..	...	577
Clovis Memorial Hospital	Gen	City	59	52	12	768	2,655
Crownpoint, 90—McKinley							
Eastern Navajo Hospital	Gen	IA	65	37	10	138	1,185
Dawson, 2,000—Colfax							
Phelps Dodge Corp. Hospital	Gen	NPAssn	30	6	4	54	261
Dulce, 150—Rio Arriba							
Jicarilla Apache Hospital	Gen	IA	23	9	4	21	237
Embudo, —Rio Arriba							
Embudo Presbyterian Hosp.	Gen	Church	25	14	13	148	710
Farmington, 2,161—San Juan							
San Juan Episcopal Indian Mission Hospital	Gen	Church	16	11	3	50	382
San Juan Hospital	Gen	NPAssn	12	8	5	73	503
Fort Bayard, 750—Grant							
Veterans Admin. Hospital▲	TB	Vet	305	252	..	...	1,101
Fort Stanton, 490—Lincoln							
U. S. Marine Hospital▲	TB	USPHS	237	193	..	9	250
Fort Wingate, 100—McKinley							
Charles H. Burke Hospital	Gen	IA	40	18	7	120	823
Gallup, 7,041—McKinley							
St. Mary's Hospital▲	Gen	Church	90	37	12	358	2,122

Key to symbols and abbreviations is on page 1091

NEW MEXICO—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Hot Springs, 2,940—Sierra							
[illegible] pital for [illegible]▲	Orth	State	100	64	..	...	174
Las Vegas, 5,941—San Miguel							
Las Vegas Hospital (Carpenter Memorial)	Gen	NPAssn	28	...	4	...	...
New Mexico State Hospital	Ment	State	960	950	..	...	300
St. Anthony's Hospital	Gen	Church	60	46	15	266	1,747
Mescalero, 200—Otero							
Mescalero Apache Indian Hospital	Gen	IA	32	13	4	69	509
Raton, 7,607—Colfax							
New Mexico Miners' Hosp.▲	Gen	State	87	26	10	204	1,081
Roswell, 13,482—Chaves							
St. Mary's Hospital	Gen	Church	80	66	20	616	3,408
Santa Fe, 20,325—Santa Fe							
St. Vincent's Hospital▲○	GenTb	Church	90	72	15	377	1,995
Santa Fe Indian Hospital	Gen	IA	76	21	6	115	733
Santa Rita, 2,000—Grant							
Santa Rita Hospital	Gen	NPAssn	47	20	10	228	882
Shiprock, 125—San Juan							
Northern Navajo Hospital	Gen	IA	43	38	6	45	1,015
Silver City, 5,044—Grant							
Silver City General Hospital	Gen	Corp	30	24	12	268	1,342
Socorro, 3,712—Socorro							
State Tuberculosis Sanat.	TB	State	81	76	..	...	138
Taos, 965—Taos							
Holy Cross Hospital	Gen	Church	30	14	8	154	814
Valmora, 125—Mora							
Valmora Sanatorium	TB	NPAssn	75	48	..	...	158

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
[illegible] 2,101—Hidalgo							
[illegible]	Gen	Corp	20	6	3	13	291
[illegible] Training School for Mental Defectives	MeDe	State	76	68	..	...	10
Springer, 1,314—Colfax							
Springer Hospital	Gen	Indiv	10	No data supplied			
Taos, 965—Taos							
Thomas P. Martin Hospital	Gen	IA	17	7	3	5	315
Tohatchi, 100—McKinley							
Tohatchi General Hospital	Gen	IA	22	14	6	63	715

NEW YORK

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Albany, 130,577—Albany							
Albany Hospital★+▲○	GenTb	NPAssn	541	558	30	1,129	13,116
Anthony N. Brady Maternity Home+▲⊙	Mat	Church	70	53	86	1,525	1,612
Child's Hospital	Chil	Church	65	33	..	...	861
Memorial Hospital★▲○	Gen	NPAssn	130	117	16	449	3,262
St. Peter's Hospital★▲○	Gen	Church	159	135	..	...	4,655
Albion, 4,660—Orleans							
Arnold Gregory Memorial *Hospital*	Gen	NPAssn	24	17	11	196	767
Amityville, 5,058—Suffolk							
[illegible] Home	N&M	Corp	207	188	..	...	366
[illegible]	N&M	Corp	175	134	..	...	262
[illegible]▲	Gen	NPAssn	117	104	16	353	3,200
[illegible]	TB	County	60	31	..	...	27
St. Mary's Hospital▲○	Gen	Church	114	114	22	404	2,926
Auburn, 35,753—Cayuga							
[illegible]★▲○	Gen	NPAssn	210	158	40	849	7,005
[illegible] and *Crippled Children*	Unit of Auburn City Hospital						
Mercy Hospital	Gen	Church	84	68	14	237	2,906
Ballston Spa, 4,443—Saratoga							
Benedict Memorial Hospital	Gen	NPAssn	25	7	0	64	714
Batavia, 17,267—Genesee							
Genesee Memorial Hospital▲	Gen	NPAssn	65	53	17	446	1,956
St. Jerome Hospital▲	Gen	Church	77	61	18	462	2,555
Veterans Admin. Center▲	Gen	Vet	294	238	..	...	1,760
Bath, 4,696—Steuben							
Bath Memorial Hospital▲	Gen	NPAssn	60	40	10	392	1,436
Veterans Admin. Hospital▲	Gen	Vet	428	283	..	...	2,630
Bay Shore, 10,000—Suffolk							
Dr. King's Hospital	Gen	Indiv	34	13	5	109	500
Southside Hospital▲	Gen	NPAssn	98	79	24	879	4,377
[illegible]	N&M	Corp	77	37	..	...	27
[illegible]	Gen	NPAssn	50	29	11	191	1,161
Matteawan State Hospital	Ment	State	1,541	1,541	..	...	95
Bedford Hills, 2,000—Westchester							
Montefiore Hospital Country Sanatorium+▲	TB	NPAssn	230	217	..	...	228
Bellerose, 1,317—*Queens*							
Hillside Hospital+	N&M	NPAssn	88	77	..	...	222
Binghamton, 78,309—Broome							
Binghamton City Hosp.★+▲○	Gen	City	490	333	40	1,203	8,970
Binghamton State Hosp.+▲○	Ment	State	2,974	2,681	..	...	754
Our Lady of Lourdes Memorial Hospital▲	Gen	Church	88	63	22	739	3,143
Brentwood, 495—*Suffolk*							
Pilgrim State Hospital+▲	Ment	State	9,529	9,724	..	...	1,825
Ross Sanitarium	Conv	Indiv	40	32	..	...	87
Brewster, 1,863—Putnam							
[illegible]	N&M	*Indiv*	20	18	..	...	30
[illegible]	Gen	NPAssn	15	16	6	149	588
[illegible]▲	Gen	NPAssn	104	76	20	584	2,770
Brooklyn, 2,698,285—Kings							
Adelphi Hospital	Gen	NPAssn	160	126	50	1,221	4,832
Bay Ridge Hospital▲	Gen	Corp	83	53	37	1,090	2,816
Bensonhurst Maternity Hosp.	Mat	Corp	24	20	26	810	834
Bethany Deaconess Hospital	*Gen*	*Church*	83	51	24	534	1,703
Beth-El Hospital★+▲	Gen	NPAssn	242	190	90	2,714	7,124
Beth Moses Hospital★+▲	Gen	NPAssn	185	139	30	618	4,422
Brooklyn Cancer Institute+▲	Cancer	City	87	68	..	...	770
Brooklyn Doctors Hospital	*Gen*	*Corp*	108	45	46	1,056	2,792
Brooklyn Eye and Ear Hospital+▲	ENT	NPAssn	143	58	..	...	7,243
Brooklyn Hebrew Home and Hospital for Aged	InstGen	[illegible]	407	376	..	...	104
Brooklyn [illegible]▲	[illegible]	[illegible]	330	209	44	1,235	7,770
Brooklyn [illegible]▲	[illegible]	[illegible]	3,400	3,255	..	...	2,504
Brooklyn [illegible]	[illegible]	[illegible]	125	83	..	...	187
Brooklyn [illegible]	[illegible]	[illegible]	43	38	45	1,430	1,739
Bushwick [illegible]▲	[illegible]	[illegible]	100	77	25	673	2,816
Caledonian Hospital▲	Gen	*NPAssn*	160	66	30	597	2,378
Carson C. Peck Memorial Hospital▲	Gen	NPAssn	108	80	40	803	2,788
Coney Island Hospital★+▲	Gen	City	270	179	30	393	4,861
Crown Heights Hospital	Gen	Corp	144	100	28	844	3,991
Cumberland Hospital★+▲○	Gen	City	361	216	39	687	5,729
Evangelical Deaconess Hosp.	Gen	Church	87	61	35	1,003	2,259
Fort Hamilton Station Hospital	Gen	Army	60	26	..	...	878
Greenpoint Hospital★+▲	Gen	City	268	188	32	638	4,819
Harbor Hospital	Gen	NPAssn	77	36	24	136	1,581
Hospital of the Holy Family▲	Gen	Church	110	92	..	...	2,233
House of St. Giles the Cripple+▲	Orth	Church	44	40	..	...	178
Israel Zion Hospital★+▲	Gen	NPAssn	365	298	142	4,917	10,707
Jewish Hospital★+▲○	Gen	NPAssn	547	416	114	4,471	13,035
Jewish Sanitarium and Hospital for Chronic Diseases+▲	Chr	NPAssn	525	516	..	...	139
Kings County Hospital★+▲○	*Gen*	*City*	2,280	1,911	120	2,533	49,467
Kingston Avenue Hospital+▲⊙	IsoTb	City	510	254	..	...	2,987
Kingsway Hospital	Gen	Indiv	22	No data supplied			
Long Island College [illegible]★+▲	Gen	NPAssn	402	300	47	1,403	8,424
[illegible]▲	*Gen*	Church	90	53	28	659	3,368
[illegible]★+▲	Gen	Church	453	286	86	2,097	8,949
[illegible]▲	*Gen*	*Corp*	55	44	21	675	2,032
Norwegian Lutheran Deaconess Home and Hospital★+▲○	Gen	Church	210	158	53	918	4,679
Prospect Heights Hospital▲○	Gen	NPAssn	148	119	39	903	4,500
Riverdale Hospital	*Gen*	*Corp*	40	12	18	367	600
St. Catherine's Hospital★▲○	Gen	Church	257	200	57	1,511	6,310
St. Charles Hospital Orthopedic *Clinic*▲	Orth	Church	55	48	..	...	219
St. John's Hospital★+▲○	Gen	Church	215	138	35	621	4,278
St. Mary's Hospital★+▲○	Gen	Church	253	178	63	1,001	6,586
St. Peter's Hospital★	Gen	Church	200	124	27	443	2,745
Samaritan Hospital	Gen	Church	85	52	27	776	2,056
Shore Road Hospital	Gen	Corp	100	49	40	817	2,514
Swedish Hospital	Gen	NPAssn	93	63	18	466	2,176
U. S. Naval Air Station Dispensary	Gen	Navy	118	7	..	...	2,122
U. S. Naval Hospital★+▲	Gen	Navy	1,214	1,113	55	1,103	16,650
U. S. Naval Special Hospital	Gen	Navy	787	657	..	...	2,562
U. S. Public Health Service Hospital▲	*Gen*	*USPHS*	485	352	..	...	7,806
Unity Hospital★	Gen	NPAssn	226	132	57	1,320	5,299
Victory *Memorial Hospital*	*Gen*	*NPAssn*	53	40	25	522	1,704
Wade Hospital	Gen	Indiv	20	14	1	57	422
Williamsburgh *Maternity* Hospital	Mat	Indiv	69	40	52	1,479	1,618
Wyckoff Heights Hospital★▲	*Gen*	NPAssn	167	124	50	912	4,539
Buffalo, 575,901—Erie							
Buffalo Columbus Hospital	Gen	NPAssn	117	82	8	319	3,138
Buffalo Eye and Ear Hospital and Wettlaufer Clinic	ENT	NPAssn	14	8	..	...	603
Buffalo General Hospital★+▲○	Gen	NPAssn	450	431	50	1,819	11,141
Buffalo Hospital of the Sisters of Charity★▲	Gen	Church	194	169	..	...	6,077
Buffalo State Hospital+▲○	Ment	State	2,625	2,508	..	...	574
Children's Hospital+▲○	MatCh	NPAssn	250	261	60	1,793	6,744
Deaconess Hospital★+▲○	Gen	NPAssn	206	201	45	1,265	7,010
Edward J. Meyer Memorial Hospital (Buffalo City Hospital)★+▲○	GenTb	City	1,131	791	25	501	9,065
Emergency Hospital of the Sisters of Charity▲	Gen	Church	172	131	..	...	4,953
Lafayette General Hospital	Gen	NPAssn	64	38	17	229	1,524
Louise de Marillac Hospital▲	Mat	Church	160	84	91	3,091	3,253
Mercy Hospital★▲○	Gen	*Church*	198	177	60	1,551	6,207
Millard Fillmore Hosp.★+▲○	Gen	NPAssn	237	326	107	3,121	12,012
St. Francis Hospital	Gen	Church	60	47	21	211	2,411
State Institute for the Study of Malignant Diseases+▲	Cancer	State	107	82	..	...	1,725
U. S. Marine Hospital▲	Gen	USPHS	80	55	..	...	1,235
Callicoon, 850—Sullivan							
Callicoon Hospital	Gen	Indiv	13	8	2	83	276
Cambridge, 1,572—Washington							
Mary McClellan Hospital▲○	Gen	NPAssn	100	62	15	123	1,131

Key to symbols and abbreviations is on page 1091

NEW YORK—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Canandaigua, 8,321—Ontario							
Brigham Hall Hospital	N&M	Corp	79	56	..	...	157
Frederick Ferris Thompson Hospital▲	Gen	Corp	102	67	20	335	2,124
Veterans Admin. Hospital▲	Ment	Vet	1,599	1,488	..	...	8,995
Canastota, 4,150—Madison							
Canastota Memorial Hospital	Gen	City	21	18	8	165	698
Cassadaga, 514—Chautauqua							
Newton Memorial Hospital▲	TB	County	180	108	..	...	95
Castle Point, 23—Dutchess							
Veterans Admin. Hospital▲	TB	Vet	625	565	..	...	906
Catskill, 5,429—Greene							
Memorial Hospital of Greene County▲	Gen	StateCo	70	59	15	343	2,090
Central Islip, 2,000—Suffolk							
Central Islip State Hosp.+▲○	Ment	State	8,075	7,295	..	...	1,339
Central Valley, 1,049—Orange							
Falkirk in the Ramapos	N&M	Indiv	40	27	..	...	13
Chatham, 2,254—Columbia							
Community Hospital	Gen	Indiv	30	12	5	53	265
Chenango Bridge, 400—Broome							
Broome County Tuberculosis Hospital▲	TB	County	81	74	..	...	91
Clifton Springs, 1,413—Ontario							
Clifton Springs Sanitarium and Clinic+▲	Gen	NPAssn	275	162	12	173	4,562
Cohoes, 21,955—Albany							
Cohoes Hospital	Gen	NPAssn	61	43	9	271	1,138
Cold Spring, 1,897—Putnam							
Julia L. Butterfield Memorial Hospital	Gen	NPAssn	45	18	5	70	507
Cooperstown, 2,599—Otsego							
Mary Imogene Bassett Hospital★+▲	Gen	NPAssn	95	65	14	321	1,871
Copiague, 2,000—Suffolk							
Nassau Suffolk General Hosp.	Gen	Indiv	45	30	8	177	1,585
Corinth, 3,054—Saratoga							
Corinth Hospital	Gen	NPAssn	16	No data supplied			
Corning, 16,212—Steuben							
Corning Hospital▲	Gen	NPAssn	105	65	31	673	2,752
Cornwall, 1,978—Orange							
Cornwall Hospital▲	Gen	NPAssn	66	42	15	294	1,443
Cortland, 15,881—Cortland							
Cortland County Hospital	Gen	NPAssn	128	84	22	514	3,029
VerNooy Sanitarium	Gen	Indiv	18	15	7	220	499
Croton on Hudson, 3,843—Westchester							
Croton Manor Sanitarium	N&M	Indiv	56	30	..	...	156
Cuba, 1,699—Allegany							
Cuba Memorial Hospital	Gen	NPAssn	27	13	10	161	720
Dannemora, 4,830—Clinton							
Clinton Prison, General and Tuberculosis Hospital	Inst	State	173	121	..	...	1,154
Dannemora State Hospital	Ment	State	1,276	1,170	..	...	116
Dansville, 4,967—Livingston							
Dansville General Hospital	Gen	NPAssn	48	29	10	225	1,223
Delhi, 1,841—Delaware							
Delaware County Sanat.	ChrConv	County	33	26	..	...	80
Delhi Hospital	Gen	NPAssn	16	9	6	83	423
Dobbs Ferry, 6,883—Westchester							
Dobbs Ferry Hospital▲	Gen	NPAssn	46	31	10	138	910
Dunkirk, 17,713—Chautauqua							
Brooks Memorial Hospital▲	Gen	NPAssn	116	71	24	498	2,908
Elizabethtown, 610—Essex							
Community Hospital	Gen	NPAssn	14	8	6	50	211
Ellenville, 4,000—Ulster							
Veterans Memorial Hospital	Gen	NPAssn	21	14	7	100	468
Elmira, 45,106—Chemung							
Arnot-Ogden Memorial Hospital★▲○	Gen	NPAssn	194	157	32	1,021	6,290
Chemung County Sanatorium	TB	County	42	35	..	...	28
St. Joseph's Hospital★▲○	Gen	Church	242	186	38	665	5,470
Endicott, 17,702—Broome							
Bradford Lord Memorial Hospital	Unit of Binghamton City Hospital						
Ideal Hospital★▲	Gen	City	96	61	30	436	2,530
Farmingdale, 3,524—Nassau							
Nassau County Tuberculosis Hospital+▲	TB	County	333	238	..	...	259
Far Rockaway, —Queens							
Hospital for Joint Diseases, Country Branch	Unit of Hosp. for Joint Diseases, N. Y. C.						
St. Joseph Hospital+▲	Gen	Church	128	63	36	502	2,542
Fillmore, 518—Allegany							
Genesee Country Memorial Hospital	Gen	NPAssn	15	5	4	47	165
Fishers Island, 730—Suffolk							
Station Hospital▲	Gen	Army	62	41	..	...	746
Flushing, —Queens							
Flushing Hospital and Dispensary★▲○	Gen	NPAssn	227	159	94	2,133	7,419
Parsons Hospital	Gen	Corp	63	55	22	511	2,352
Fort Niagara (Youngstown P. O.), —Niagara							
Station Hospital	Gen	Army	57	12	..	...	457
Fort Totten, —Queens							
Station Hospital▲	Gen	Army	75	31	..	...	842
Fulton, 13,362—Oswego							
Albert Lindley Lee Memorial Hospital	Gen	City	61	35	16	381	1,269
Gabriels, 300—Franklin							
Sanatorium Gabriels▲	TB	Church	120	102	..	...	193
Geneva, 15,555—Ontario							
Geneva General Hospital▲	Gen	NPAssn	98	70	22	417	2,085
Glen Cove, 12,415—Nassau							
North Country Community Hospital▲	Gen	NPAssn	100	78	20	649	2,997
Glens Falls, 18,836—Warren							
Glen Falls Hospital▲	Gen	NPAssn	124	117	30	960	4,196
Westmount Sanatorium	TB	County	48	38	..	....	29
Gloversville, 23,329—Fulton							
Nathan Littauer Hospital○	Gen	NPAssn	133	114	30	712	3,942
Goshen, 3,073—Orange							
Goshen Hospital	Gen	NPAssn	40	25	12	184	889
Interpines	N&M	Indiv	60	43	..	...	99
Gouverneur, 4,478—St. Lawrence							
Stephen B. Van Duzee Hosp.▲	Gen	NPAssn	22	17	12	303	706
Governors Island, —New York							
Regional Hospital▲	Gen	Army	212	158	9	94	2,805
Gowanda, 3,156—Cattaraugus							
Townsend Hospital	Gen	NPAssn	22	16	10	255	891
Granville, 3,173—Washington							
Emma Laing Stevens Hosp.	Gen	NPAssn	16	9	6	131	350
Greenport, 3,259—Suffolk							
Eastern Long Island Hosp.	Gen	NPAssn	48	31	13	301	1,412
Harrison, 8,500—Westchester							
St. Vincent's Retreat	N&M	Church	200	170	..	...	50
Helmuth, 100—Erie							
Gowanda State Homeopathic Hospital+▲○	Ment	State	2,858	1,624	..	...	593
Hempstead, 20,856—Nassau							
Meadowbrook Hospital★+▲	Gen	County	250	205	24	301	4,504
Station Hospital+▲	Gen	Army	50	30	6	22	1,330
Herkimer, 9,617—Herkimer							
Herkimer Memorial Hospital	Gen	NPAssn	52	35	12	222	1,073
Holtsville, 260—Suffolk							
Suffolk Sanatorium	TB	County	110	98	..	...	72
Hornell, 15,649—Steuben							
Bethesda Hospital	Gen	NPAssn	44	25	10	154	1,201
St. James Mercy Hospital▲○	Gen	Church	102	77	18	316	4,146
Hudson, 11,517—Columbia							
Hudson City Hospital▲○	Gen	NPAssn	100	86	18	397	4,356
Huntington, 11,250—Suffolk							
Huntington Hospital▲	Gen	NPAssn	75	64	12	626	2,909
Ilion, 8,927—Herkimer							
Ilion Hospital	Gen	NPAssn	63	48	19	315	1,549
Irvington, 3,272—Westchester							
Irvington House	ChilCard	NPAssn	100	100	..	...	163
Ithaca, 19,730—Tompkins							
Cornell University Infirmary▲	Inst	NPAssn	154	34	..	...	2,367
Hermann M. Biggs Memorial Hospital+▲⊙	TB	State	250	161	..	...	218
Tompkins County Memorial Hospital	Gen	NPAssn	147	99	26	742	3,787
Jackson Heights, —Queens							
Physicians Hospital	Gen	Corp	127	85	44	1,811	5,511
Jamaica, —Queens							
Jamaica Hospital★▲	Gen	NPAssn	185	176	42	1,279	5,563
Mary Immaculate Hosp.★+▲○	Gen	Church	273	226	63	1,711	7,513
Memorial Hospital	Gen	Indiv	58	55	16	704	3,121
Queens General Hospital★+▲⊙	Gen	City	705	534	52	1,042	10,657
Triboro Hospital+▲⊙	TB	City	557	398	..	...	356
Jamestown, 42,638—Chautauqua							
Jamestown General Hospital▲	Gen	City	116	98	22	424	3,330
Women's Christian Association Hospital▲○	Gen	NPAssn	110	116	29	813	4,396
Jefferson, 300—Schoharie							
Jefferson Hospital	Gen	Indiv	8	4	2	6	118
Johnson City, 18,039—Broome							
Charles S. Wilson Memorial Hospital★+▲○	Gen	NPAssn	318	240	32	994	7,098
Katonah, 1,800—Westchester							
Four Winds	N&M	Corp	37	25	..	...	31
Pinewood Sanitarium	N&M	Part	86	51	..	...	181
Kew Gardens, —Queens							
Kew Gardens General Hosp.	Gen	Indiv	164	121	80	1,700	5,696
Kings Park, 2,500—Suffolk							
Kings Park State Hosp.+▲○	Ment	State	6,003	6,164	..	...	1,516
Kingston, 28,589—Ulster							
Benedictine Hospital (Our Lady of Victory Sanitarium)▲○	Gen	Church	92	80	18	312	3,167
Kingston Hospital+▲○	Gen	NPAssn	108	84	15	353	2,904
Ulster County Tuberculosis Hospital▲	TB	County	56	52	..	...	48
Lackawanna, 24,058—Erie							
Moses Taylor Hospital▲	Indus	NPAssn	28	12	..	...	202
Our Lady of Victory Hosp.★▲	Gen	Church	148	130	32	957	4,499
Lake Kushaqua, 200—Franklin							
Stony Wold Sanatorium▲	TB	NPAssn	145	134	..	...	83
Lake Placid, 3,136—Essex							
Lake Placid General Hospital	Gen	City	20	12	6	57	430
Liberty, 3,788—Sullivan							
Maimonides Hospital	Gen	NPAssn	40	21	5	122	724
Workmen's Circle Sanatorium	TB	NPAssn	75	37	..	...	76
Little Falls, 10,163—Herkimer							
Little Falls Hospital	Gen	NPAssn	72	44	17	373	2,136
Livingston, 406—Columbia							
Potts Memorial Institute▲	TB	NPAssn	60	53	..	...	76
Lockport, 24,379—Niagara							
Lockport City Hospital	Gen	City	142	137	20	701	4,822
Niagara Sanatorium▲	TB	County	225	150	..	...	159
Long Beach, 9,036—Nassau							
Long Beach Memorial Hosp.▲	Gen	NPAssn	63	31	7	109	1,159

NEW YORK—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Long Island City, —Queens							
Astoria Sanatorium	Gen	Indiv	30	26	22	727	1,199
Boulevard Hospital	Gen	Corp	87	75	32	1,192	4,018
River Crest Sanitarium......	N&M	Corp	132	101	..	...	450
St. John's Long Island City Hospital★▲○	Gen	Church	243	182	41	894	5,505
Lowville, 3,578—Lewis							
Lewis County General Hosp..	Gen	StateCo	44	31	18	279	1,455
Lyons, 3,863—Wayne							
Edward J. Barber Hospital..	Gen	Indiv	21	16	3	92	591
Lyons Hospital	Gen	Corp	26	10	6	90	433
Malone, 8,743—Franklin							
Alice Hyde Memorial Hosp.▲	Gen	NPAssn	96	66	15	309	1,993
Marcy, 800—Oneida							
Marcy State Hospital+▲⊙....	Ment	State	2,776	2,403	..	...	511
Margaretville, 812—Delaware							
Margaretville Hospital	Gen	NPAssn	32	24	10	101	001
Massena, 11,328—St. Lawrence							
Massena Memorial Hospital..	Gen	City	50	30	15	295	1,138
Medina, 5,871—Orleans							
Medina Memorial Hospital▲..	Gen	NPAssn	34	32	10	249	1,005
Middle Grove, 100—Saratoga							
Saratoga County Tuberculosis Hospital	TB	County	60	37	..	...	23
Middletown, 21,908—Orange							
Elizabeth A. Horton Memorial Hospital▲	Gen	NPAssn	90	84	18	317	2,495
Middletown Sanitarium and Hospital	Gen	Indiv	45	33	8	247	1,163
Middletown State Homeopathic Hospital+▲○	Ment	State	3,455	3,334	..	...	331
Mineola, 10,064—Nassau							
Nassau Hospital★▲	Gen	NPAssn	226	177	50	1,357	6,217
Mineville, 600—Essex							
Mineville Hospital	Indus	NPAssn	18	11	1	1	376
Monticello, 3,737—Sullivan							
Hamilton Avenue Hospital...	Gen	Indiv	21	17	4	85	509
Monticello Hospital	Gen	NPAssn	26	20	5	94	872
Montour Falls, 1,345—Schuyler							
Shepard Relief Hospital......	Gen	NPAssn	34	20	12	165	788
Mount Kisco, 5,941—Westchester							
Northern Westchester Hosp.▲	Gen	NPAssn	102	74	24	394	3,033
Mount Morris, 3,530—Livingston							
Mount Morris Tuberculosis Hospital+▲⊙	TB	State	250	156	..	...	147
Mount Vernon, 67,362—Westchester							
Mount Vernon Hospital★▲○...	Gen	NPAssn	213	136	41	1,150	5,412
Newark, 9,646—Wayne							
Newark Hospital	Gen	Indiv	26	21	6	177	857
Newburgh, 31,883—Orange							
Estelle and Walter O. Odell Memorial Sanatorium for Tuberculosis	TB	County	50	34	..	...	32
St. Luke's Hospital▲..........	Gen	NPAssn	225	127	32	674	4,873
New [illegible]							
Ne [illegible] ▲	Gen	NPAssn	264	228	45	1,054	7,244
Ste [illegible] ▲	Gen	Army	138	61	..	...	2,091
New York City, 4,582,269—New York							
Babies Hospital+▲⊙	Unit of Presbyterian Hospital						
Beekman-Downtown Hosp.+▲..	Gen	NPAssn	96	62	..	...	1,770
Bellevue Hospital★+▲○	Gen	City	3,223	2,445	102	1,329	60,163
Beth David Hospital★▲.......	Gen	NPAssn	100	118	30	612	4,413
Beth Israel Hospital★+▲○.....	Gen	NPAssn	332	254	80	2,297	7,651
Bronx Eye and Ear Infirmary▲	ENT	NPAssn	54	22	..	...	3,067
Bronx Hospital★+▲	Gen	NPAssn	305	222	77	2,408	7,746
Bronx Maternity and Woman's Hospital	MatGyn	NPAssn	34	20	40	703	846
Charles B. Towns Hospital...	Drug	Corp	50	20	..	...	915
Columbus Hospital★▲.........	Gen	Church	260	184	40	573	5,577
Columbus Hospital Extension	See Mother Cabrini Memorial Hospital						
Community Hospital	Gen	NPAssn	89	20	12	97	926
Crotona Park Hospital.......	Gen	Corp	28	20	..	358	843
Doctors Hospital▲	Gen	NPAssn	271	210	62	1,333	6,076
Flower and Fifth Avenue Hospitals★+▲○	Gen	NPAssn	337	290	82	1,371	9,574
Fordham Hospital★+▲○	Gen	City	505	403	34	747	9,302
French Hospital★+▲	Gen	NPAssn	251	201	62	1,488	5,890
Goldwater Memorial Hosp.★+▲	Gen	City	1,660	1,561	..	...	1,505
Gouverneur Hospital★+▲	Gen	City	200	139	20	...	2,852
Harlem Eye and Ear Hosp.+▲	ENT	NPAssn	40	7	..	...	1,775
Harlem Hospital★+▲○	Gen	City	654	581	109	2,422	16,512
Home and Hospital of the Daughters of Jacob.......	InstGen	NPAssn	255	247	..	...	141
Home for Aged and Infirm Hebrews▲	InstGen	NPAssn	61	60	..	...	282
Hospital for Joint Diseases★+▲	GenOrth	NPAssn	362	290	..	...	5,017
Hospital for [illegible] ▲	[illegible]	NPAssn	227	158	..	...	2,403
Hospital of [illegible] Institute for Medical Research▲	Gen	NPAssn	60	48	..	...	293
International Medical Center..	Gen	NPAssn	54	No data supplied			
Jewish Maternity Hospital...	Unit of Beth Israel Hospital						
[illegible] Memorial Hospital★▲..	Gen	NPAssn	179	150	40	1,611	5,158
[illegible] ▲ ..	Gen	NPAssn	178	126	..	...	3,959
[illegible] Hosp.	Mat	Indiv	30	32	35	1,390	1,495
Lenox Hill Hospital★+▲......	Gen	NPAssn	552	299	63	1,526	11,140
Le Roy Sanitarium...........	Gen	Corp	51	41	14	343	1,385
Lincoln Hospital★+▲○	Gen	City	399	319	70	1,421	9,889
Lying-In Hospital+▲	Unit of New York Hospital						

NEW YORK—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Manhattan Eye, Ear and Throat Hospital+▲	ENT	NPAssn	217	129	..	...	11,050
Manhattan Maternity and Dispensary	Unit of New York Hospital						
Manhattan State Hospital+▲○	Ment	State	3,003	3,055	..	...	1,672
Memorial Hospital★+▲	Cancer	NPAssn	213	190	..	...	5,314
Metropolitan Hospital★+▲○ ..	Gen	City	1,143	936	40	692	9,423
Midtown Hospital▲	Gen	NPAssn	61	51	..	...	2,609
Misericordia Hospital★○	Gen	Church	181	117	55	912	4,049
Montefiore Hospital for Chronic Diseases★+▲	GenTb	NPAssn	751	513	..	...	1,781
Morrisania City Hosp.★+▲⊙..	Gen	City	466	389	45	831	10,193
Mother Cabrini Memorial Hospital★▲	Gen	Church	175	95	30	418	2,757
Mount Eden Hospital........	Gen	Indiv	40	35	30	414	2,118
Mount Sinai Hospital★+▲○...	Gen	NPAssn	853	632	..	...	14,291
Murray Hill Hospital.........	Gen	Corp	86	26	..	...	1,050
Neurological Institute of New York+▲⊙	Unit of Presbyterian Hospital						
New York City Cancer Institute Hospital+▲	Cancer	City	192	187	..	...	665
New York City Hospital★+▲..	Gen	City	850	531	30	466	6,895
New York Eye and Ear Infirmary+▲	ENT	NPAssn	181	123	..	...	6,491
New York Hospital★+▲○......	Gen	NPAssn	977	793	121	998	17,623
New York Infirmary for Women and Children★+▲...	Gen	NPAssn	121	78	40	763	2,102
New York Nursery and Childs Hospital	Unit of New York Hospital						
New York Orthopaedic Dispensary and Hospital+▲....	Orth	NPAssn	142	126	..	...	1,100
New York Polyclinic Medical School and Hospital★+▲....	Gen	NPAssn	374	215	37	997	8,526
New York Post-Graduate Medical School and Hosp.★+▲○	Gen	NPAssn	410	333	..	...	8,616
New York Skin and Cancer Hospital	Unit of New York Post-Graduate Medical School and Hospital						
New York State Psychiatric Institue and Hospital+▲⊙...	Ment	State	150	120	..	...	323
Park East Hospital..........	Gen	Corp	124	110	24	601	5,501
Parkway Hospital	Gen	NPAssn	65	28	15	461	1,812
Park West Hospital..........	Gen	Corp	85	55	12	360	4,350
Payne Whitney Psychiatric Clinic▲	Unit of New York Hospital						
Presbyterian Hospital★+▲○ ..	Gen	NPAssn	1,262	1,008	144	2,093	26,367
Psychiatric Pavilion	Unit of Bellevue Hospital						
Reconstruction Hospital	Unit of New York Post-Graduate Medical School and Hospital						
Riker's Island Hospital▲.....	Inst	City	260	82	..	...	1,152
Roosevelt Hospital★+▲○	Gen	NPAssn	377	279	..	...	7,435
St. Clare's Hospital★▲........	Gen	Church	330	270	70	1,157	7,406
St. Elizabeth's Hospital▲....	Gen	Church	155	107	27	722	3,701
St. Francis Hospital★▲.......	Gen	Church	370	212	60	1,411	6,120
St. Joseph's Hospital for Chest Diseases+▲	TB	Church	295	292	..	...	702
St. Luke's Hospital★+▲○.....	Gen	NPAssn	598	380	..	...	8,160
St. Vincent's Hospital★+▲○...	Gen	Church	517	410	100	1,351	12,131
Seton Hospital (Male Div.)▲..	TB	Church	265	261	..	...	374
Seton Hospital (Nazareth Hospital for Women and Children)▲	TB	Church	305	213	..	...	272
Sloane Hospital for Women+▲⊙	Unit of Presbyterian Hospital						
Square Sanitarium	Gen	Corp	150	115	60	1,969	5,725
Sydenham Hospital★+▲.......	Gen	NPAssn	208	151	41	1,017	4,918
Union Hospital	Gen	NPAssn	100	61	20	461	2,323
U. S. Marine Hospital+▲......	Gen	USPHS	461	385	..	...	5,268
University Heights Sanit.....	Gen	Corp	50	26	17	475	1,577
Veterans Admin. Hospital▲...	Gen	Vet	1,911	1,619	..	...	10,135
West Hill Sanitarium.........	N&M	Indiv	99	86	..	...	670
West Side Hospital and Disp.	Gen	NPAssn	137	101	..	...	3,949
Wickersham Hospital	Gen	Corp	160	.. No data supplied			
Willard Parker Hospital+▲⊙..	Iso	City	433	192	..	..	4,604
William Booth Memorial Hospital▲	Gen	Church	48	27	21	263	1,018
Woman's Hospital+▲	GynOb	NPAssn	220	220	160	2,270	4,618
Niagara Falls, 78,029—Niagara							
Mount St. Mary's Hospital▲○	Gen	Church	185	147	55	1,114	5,647
Niagara Falls Memorial Hospital▲	Gen	NPAssn	167	160	25	975	6,813
Northport, 3,093—Suffolk							
Veterans Admin. Hospital▲...	Ment	Vet	2,806	2,766	..	...	1,097
North Tonawanda, 20,254—Niagara							
De Graff Memorial Hospital..	Gen	City	50	43	21	716	4,545
Norwich, 8,019—Chenango							
Chenango Memorial Hosp.▲..	Gen	NPAssn	76	48	15	234	1,751
[illegible]							
[illegible] ▲	Gen	Corp	91	60	20	493	2,126
[illegible]wrence							
A. Barton Hepburn Hosp.▲○	Gen	Church	160	110	20	421	4,001
St. Lawrence State Hosp+▲○	Ment	State	2,273	1,991	..	...	316
[illegible]							
[illegible]	Gen	Part	30	15	5	101	623
Olean General Hospital▲.....	Gen	NPAssn	85	65	21	473	2,612
Rocky Crest Sanatorium▲....	TB	County	41	39	..	...	57
St. Francis Hospital▲........	Gen	Church	100	57	24	236	1,712
Oneida, 10,291—Madison							
Main Street Hospital........	Gen	Indiv	16	11	4	75	246
Oneida City Hospital▲.......	Gen	City	80	61	19	434	2,279

Key to symbols and abbreviations is on page 1091

NEW YORK—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Oneonta, 11,731—Otsego							
Aurelia Osborn Fox Memorial Hospital	Gen	NPAssn	88	55	17	403	1,995
Homer Folks Tuberculosis Hospital+▲⊙	TB	State	250	168	..	...	200
Parshall Private Hospital	Gen	Indiv	28	15	6	87	299
Orangeburg, 750—Rockland							
Rockland State Hospital+▲○	Ment	State	6,435	5,984	..	...	1,410
Ossining, 15,996—Westchester							
Ossining Hospital▲	Gen	NPAssn	65	56	12	261	2,120
Sing Sing Prison Hospital▲	Inst	State	84	43	..	...	1,001
Stony Lodge	N&M	Part	44	14	..	...	31
Oswego, 22,062—Oswego							
Oswego Hospital	Gen	NPAssn	72	59	13	513	2,184
Otisville, 889—Orange							
Municipal Sanatorium+▲	TB	City	420	384	..	...	564
Owego, 5,068—Tioga							
Glenmary Sanitarium	N&M	Corp	50	2	..	...	4
Peekskill, 17,311—Westchester							
Peekskill Hospital	Gen	NPAssn	79	37	20	328	1,711
Penn Yan, 5,308—Yates							
Soldiers and Sailors Memorial Hospital	Gen	NPAssn	50	30	10	200	1,114
Perrysburg, 375—Cattaraugus							
J. N. Adam Memorial Hosp.▲	TB	City	442	373	..	...	291
Philmont, 1,679—Columbia							
Columbia County Tuberculosis Sanatorium	TB	County	72	28	..	...	38
Plattsburg, 16,351—Clinton							
Champlain Valley Hospital▲○	Gen	NPAssn	100	90	15	430	3,234
Physicians Hospital▲	Gen	NPAssn	110	71	18	344	2,595
Pomona, 50—Rockland							
Summit Park Sanatorium▲	TB	County	91	87	..	...	60
Port Chester, 23,073—Westchester							
Brooklea Farm	N&M	Indiv	18	16	..	...	12
Mary Harkness Home for Convalescents	Conv	NPAssn	50	33	..	...	595
St. Luke's Convalescent Hosp.	See Greenwich, Conn.						
United Hospital★▲	Gen	NPAssn	190	133	32	920	5,034
Port Jefferson, 3,500—Suffolk							
John T. Mather Memorial Hospital▲	Gen	NPAssn	70	51	24	395	2,122
St. Charles Hospital for Crippled Children▲	Orth	Church	200	188	..	...	430
Wharton Memorial Institute	Unit of St. Charles Hospital for Crippled Children						
Port Jervis, 9,749—Orange							
St. Francis Hospital▲	Gen	Church	55	40	10	160	1,047
Potsdam, 4,821—St. Lawrence							
Potsdam Hospital▲	Gen	NPAssn	75	76	22	418	2,212
Poughkeepsie, 40,478—Dutchess							
Hudson River State Hosp.+▲○	Ment	State	4,916	4,740	..	...	706
St. Francis Hospital▲○	Gen	Church	101	83	25	330	2,748
Samuel and Nettie Bowne Hospital	TB	NPAssn	50	33	..	...	124
Samuel W. Bowne Memorial Hospital	TB	CyCo	131	101	..	...	73
Vassar Brothers Hospital★▲○	Gen	NPAssn	207	177	43	811	6,200
Queens Village, —Queens							
Creedmoor State Hospital+▲○	Ment	State	5,062	4,723	..	...	1,484
Ray Brook, 550—Essex							
New York State Hospital+▲	TB	State	377	332	..	...	334
Rhinebeck, 1,697—Dutchess							
Northern Dutchess Health Service Center▲	Gen	NPAssn	35	32	8	165	833
Richland, 300—Oswego							
Oswego County Sanatorium▲	TB	County	105	62	..	...	62
Rochester, 324,975—Monroe							
Genesee Hospital★+▲○	Gen	NPAssn	226	188	36	966	6,328
Highland Hospital★+▲○	Gen	NPAssn	195	152	60	1,290	5,217
Iola-Monroe County Tuberculosis Sanatorium+▲	TB	County	370	321	..	...	286
Monroe County Hospital▲	Gen	County	500	404	20	13	1,847
Park Avenue Hospital▲○	Gen	NPAssn	92	75	20	505	2,956
Rochester General Hosp.★+▲○	Gen	NPAssn	324	261	63	1,960	9,761
Rochester Municipal Hosp.★+▲	See Strong Memorial-Rochester Municipal Hospitals						
Rochester State Hospital+▲○	Ment	State	3,339	3,089	..	...	642
St. Mary's Hospital★+▲○	Gen	Church	325	267	65	1,595	9,196
Strong Memorial-Rochester Municipal Hospitals★+▲○	Gen	NPAssnCy	649	513	84	1,365	13,845
Rockaway Beach, —Queens							
Rockaway Beach Hospital★▲	Gen	NPAssn	110	78	15	385	2,690
Rockville Centre, 18,613—Nassau							
Mercy Hospital▲	Gen	Church	130	120	60	1,340	3,518
South Nassau Communities Hospital▲	Gen	NPAssn	115	101	40	1,375	4,279
I							
	Gen	County	200	164	8	67	1,453
Rome Hospital and Murphy Memorial Hospital▲	Gen	City	83	80	28	843	3,354
Rome State School	McDe	State	3,627	3,890	12	5	261
Roslyn, 972—Nassau							
St. Francis Sanatorium for Cardiac Children	Card	Church	163	150	..	...	144
St. Albans, —Queens							
U. S. Naval Hospital★+▲	Gen	Navy	4,618	4,801	..	...	32,461
Salamanca, 9,011—Cattaraugus							
City Hospital	Gen	City	46	38	10	290	2,137
Salisbury Center, 331—Herkimer							
Pine Crest Sanatorium▲	TB	County	65	60	..	...	33
Sampson, —Ontario							
U. S. Naval Hospital★▲	Gen	Navy	2,375	1,956	14	211	22,099
Saranac Lake, 7,138—Franklin							
General Hospital▲	Gen	NPAssn	50	31	9	169	1,278
Northwoods Sanatorium	TB	NPAssn	26	25	..	...	21
Prescott House	TB	NPAssn	20	20	..	...	14
Will Rogers Memorial Hosp.▲	TB	NPAssn	80	58	..	...	40
Saratoga Springs, 13,705—Saratoga							
Saratoga Hospital▲	Gen	NPAssn	90	60	17	331	2,197
Veterans Admin. Hospital▲	Gen	Vet	50	45	..	...	403
Schenectady, 87,549—Schenectady							
Eastern New York Orthopedic Hosp.-School "Sunny View"	OrChil	NPAssn	32	33	..	...	80
Ellis Hospital★+▲○	Gen	NPAssn	400	400	70	1,614	14,657
Schenectady County Tuberculosis Hospital (Glendridge Sanatorium)+▲	TB	County	132	108	..	...	111
Seneca Falls, 6,452—Seneca							
Seneca Falls Hospital	Gen	City	30	16	9	178	590
Sidney, 3,012—Delaware							
The Hospital	Gen	City	29	22	13	196	891
Sodus, 1,513—Wayne							
J. F. Myers Hospital	Gen	Indiv	25	15	7	122	449
	Epil	State	2,285	2,317	..	...	190
▲	Gen	NPAssn	100	61	20	444	1,984
Stamford, 1,088—Delaware							
	Gen	NPAssn	18	8	6	102	268
—Richmond							
▲	Gen	USPHS	1,200	1,065	23	580	18,029
Staten Island, 174,441—Richmond							
Richmond Borough Hospital	Iso	City	40	10	..	...	186
Richmond Memorial Hosp.+▲	Gen	NPAssn	100	73	18	283	1,747
St. Vincent's Hospital★▲	Gen	Church	203	187	35	974	5,920
Seaside Hospital of St. John's Guild	Unit of Hospital for Special Surgery, New York City						
Sea View Hospital+▲⊙	TB	City	1,996	1,462	12	12	1,595
Staten Island Hospital★▲○	Gen	NPAssn	238	161	62	1,346	5,303
Suffern, 3,768—Rockland							
Good Samaritan Hospital▲	Gen	Church	92	61	16	557	2,729
Sunmount, 50—Franklin							
Veterans Admin. Hospital▲	TB	Vet	583	483	..	...	938
Syracuse, 205,967—Onondaga							
City Hospital▲⊙	Iso	City	75	33	..	...	862
Crouse-Irving Hospital★+▲○	Gen	NPAssn	215	207	40	1,386	7,172
General Hospital★+▲○	Gen	NPAssn	127	105	43	932	3,822
Hospital of the Good Shepherd★+▲○	Gen	NPAssn	195	150	..	...	4,660
Onondaga General Hospital	Gen	NPAssn	75	46	8	96	1,245
Onondaga Sanatorium▲	TB	County	255	220	..	...	225
Peoples Hospital	Gen	NPAssn	28	18	8	82	639
St. Joseph Hospital★▲○	Gen	Church	200	162	35	613	5,662
St. Mary's Maternity Hospital and Children's Home	Mat	Church	38	21	29	489	526
Syracuse Memorial Hosp.★+▲○	Gen	NPAssn	270	221	60	1,775	9,152
Syracuse Psychopathic Hospital+▲	Ment	State	60	55	..	...	610
Twin Elms	N&M	Indiv	14	14	..	...	150
Tarrytown, 6,874—Westchester							
▲	Gen	NPAssn	57	31	13	266	1,584
	McDe	State	3,792	4,098	6	10	478
▲	Gen	NPAssn	47	26	6	198	950
Troy, 70,304—Rensselaer							
Leonard Hospital▲	Gen	NPAssn	133	83	25	562	3,056
Marshall Sanitarium	N&M	NPAssn	60	56	..	...	210
Price Memorial Hospital	Unit of Samaritan Hospital						
St. Joseph's Maternity Hosp.	Mat	Church	32	8	24	219	289
Samaritan Hospital★+▲○	Gen	NPAssn	181	151	21	727	4,600
Troy Hospital▲	Gen	Church	272	155	24	483	4,573
Trudeau, 600—Essex							
Trudeau Sanatorium+▲⊙	TB	NPAssn	200	210	..	...	215
Tupper Lake, 5,451—Franklin							
Mercy General Hospital	Gen	Church	35	18	7	93	523
Tuxedo Park, 2,500—Orange							
Tuxedo Memorial Hospital▲	Gen	NPAssn	33	19	7	101	668
Utica, 100,518—Oneida							
Broadacres Sanatorium (Oneida County Sanatorium)▲	TB	County	182	117	..	...	127
Children's Hospital Home	Orth	NPAssn	40	37	..	...	174
Faxton Hospital▲○	Gen	NPAssn	101	95	26	608	3,437
Masonic Soldiers and Sailors Memorial Hospital	Gen	NPAssn	200	100	..	...	389
St. Elizabeth Hospital▲○	Gen	Church	160	153	30	762	6,376
St. Luke's Home and Hosp.▲	Gen	Church	121	91	29	633	3,457
Utica General Hospital	Gen	City	124	45	14	86	2,620
Utica Memorial Hospital▲○	Gen	NPAssn	77	61	25	377	3,166
Utica State Hospital+▲○	Ment	State	1,828	1,742	..	...	501
Valhalla, 2,200—Westchester							
Grasslands Hospital★+▲○	Gen	County	810	470	15	114	3,517
Warsaw, 3,554—Wyoming							
Wyoming County Community Hospital+▲	Gen	StateCo	115	92	20	417	2,099
Warwick, 2,534—Orange							
St. Anthony's Hospital	Gen	Church	50	17	14	132	618
Waterloo, 4,010—Seneca							
Waterloo Memorial Hospital	Gen	NPAssn	25	21	7	111	561
Watertown, 33,385—Jefferson							
House of the Good Samaritan▲○	Gen	NPAssn	178	133	33	615	3,736
Jefferson County Sanat.+▲	TB	County	75	23	..	...	68
Mercy Hospital▲○	Gen	Church	137	114	23	553	3,731

Key to symbols and abbreviations is on page 1091

NEW YORK—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Waverly, 5,450—Tioga							
Tioga County General Hosp.▲	Gen	NPAssn	67	51	12	248	1,788
Wayland, 1,795—Steuben							
Wayland Hospital	Gen	Indiv	18	14	4	94	545
Wellsville, 5,942—Allegany							
Memorial Hospital of Wm. F. and Gertrude F. Jones	*Gen*	*City*	*55*	*44*	*10*	*393*	*2,025*
Westfield, 3,434—Chautauqua							
Westfield Memorial Hospital	Gen	NPAssn	20	13	9	148	530
West Haverstraw, 2,533—Rockland							
New York State Reconstruction Home+▲	OrChil	State	310	189	..	...	363
West Point, —Orange							
Station Hospital▲	Gen	Army	158	79	8	80	3,470
White Plains, 40,327—Westchester							
Burke Convalescent Home...	Conv	NPAssn	250	181	..	...	3,105
New York Hospital—Westchester Division+▲⊙	N&M	NPAssn	301	260	..	...	360
St. Agnes Hospital★▲	Gen	Church	138	85	30	442	2,757
White Plains Hospital★▲◇	Gen	NPAssn	178	139	24	471	5,085
Willard, *600—Seneca*							
Willard State Hospital▲◇	Ment	State	3,104	2,846	..	...	340
Wingdale, 500—Dutchess							
Harlem Valley State Hospital+▲◇	Ment	State	*4,639*	*4,732*	..	...	*468*
Woodhaven, —Queens							
St. Anthony's Hospital▲	TB	Church	380	372	..	...	805
Wynantskill, 200—Rensselaer							
Pawling Sanatorium	TB	County	118	73	..	...	87
Yaphank, 350—Suffolk							
Suffolk Home and Infirmary	GenChr	County	258	176	..	...	106
Yonkers, 142,589—Westchester							
Gray Oaks Hospital	TB	City	45	43	..	...	40
House of Rest at Sprain Ridge	TB	NPAssn	76	69	..	...	146
St. John's Riverside Hosp★▲◇	Gen	NPAssn	188	135	32	714	4,629
St. Joseph's Hospital★▲	Gen	Church	177	103	20	367	2,784
Yonkers General Hospital★▲◇	Gen	NPAssn	133	93	27	721	4,626
Yonkers Professional Hosp...	Gen	Corp	150	*90*	*30*	*560*	3,095

Related Institutions

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Albany, 130,577—Albany							
Albany's Hospital for Incurables	Incur	NPAssn	*100*	*100*	..	...	*47*
St. Margaret's House and Hospital	Inst	Church	55	37	..	..	56
Albion, 4,660—Orleans							
Albion State Training School	*MeDe*	State	460	299	..	...	*90*
Orleans County Hospital	Gen	County	45	17	5	10	100
Alden, 954—Erie							
Erie County Penitentiary Hospital	Inst	County	27	6	..	...	*63*
[illegible]	Gen	City	13	10	3	96	382
[illegible]	GenChr	Corp	300	173	16	251	683
[illegible] Hospital	Gen	Indiv	14	4	5	32	172
[illegible]ster							
[illegible]	Inst	State	40	40	..	...	533
[illegible]ool.	MeDe	Indiv	55	48	..	...	7
Buffalo, [illegible]—Erie							
Ingleside Home	Mat	NPAssn	42	37	26	163	183
Castile, 902—Wyoming							
Greene Sanitarium (Castile Sanitarium)	N&M	Indiv	31	20	..	...	31
Eastview, 1,000—Westchester							
Solomon and Betty Loeb Memo[illegible]lescents	Conv	NPAssn	108	80	..	...	1,126
[illegible] Hospital	Inst	State	97	12	..	...	1,064
Far Rockaway, —Queens							
Wave Crest Convalescent Home	*OrthChil*	NPAssn	77	75	..	...	247
Hawthorne, 2,000—Westchester							
Rosary Hill Home	Cancer	Church	100	73	..	...	236
Industry, 350—Monroe							
Hospital of State Agriculture and Industrial School	Inst	State	50	22	..	...	874
Iroquois, 40—Erie							
Thomas Indian School Hosp.	Inst	State	40	12	..	...	417
[illegible]—Tompkins							
[illegible]	*Orth*	*NPAssn*	100	91	..	...	127
Johnson City, [illegible]—Broome							
Springer *Private* Hospital	Mat	Indiv	20	12	14	113	162
Keene Valley, 511—Essex							
Keene Valley Neighborhood [illegible]	Gen	NPAssn	11	6	5	41	116
[illegible]	MeDe	Indiv	13	12	..	...	14
Millbrook, 1,340—Dutchess							
Cardinal Hayes Memorial Convalescent Home	Chil	*Church*	75	61	..	...	405
Mount McGregor, 300—Saratoga							
New York State Veterans' Camp	Conv	State	175	...	..	Estab. 1945	
Napanoch, 750—Ulster							
Institution for Male Defective Delinquents	MeDe	State	23	12	..	...	318
Newark, 9,646—Wayne							
Newark *State School*	MeDe	State	2,611	2,495	..	...	241

NEW YORK—Continued

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
New York City, 4,582,269—New York							
Beth Abraham Home for Incurables	Incur	NPAssn	318	315	..	...	80
Hebrew Convalescent Home...	Conv	NPAssn	80	80	..	...	659
Home and Hospital of the Daughters of Israel	Inst	NPAssn	120	110	..	...	220
Home for Dependents	Inst	City	1,853	1,745	..	...	937
Home for Incurables	Cancer	Church	450	432	..	...	226
House of Calvary	Cancer	Church	146	119	..	...	488
Jacob Siegel Memorial Hosp...	Unit of Home and Hospital of the Daughters of Israel						
National Hospital for Speech *Disorders*	*Speech*	NPAssn	...	220	..	...	3,749
St. Andrew's Convalescent Hospital	Conv	Church	22	14	..	...	223
St. Mary's Hospital for Children	Conv	*Church*	*60*	57	..	...	485
St. Rose's Free Home for Incurable Cancer	Cancer	Church	91	85	..	...	238
Niagara Falls, 78,029—Niagara							
Niagara Falls Municipal Hospital	Iso	City	36	12	..	...	179
Oceanside (Rockville Centre P.O.), 505—Nassau							
Oceanside Gardens Sanitarium	N&M	Corp	19	16	..	...	93
Ogdensburg, 16,346—St. Lawrence							
St. John's Hospital	ChrConv	Church	35	26	..	...	64
Onondaga, 325—Onondaga							
Onondaga County Hospital.	Inst	County	230	211	..	...	246
Oxford, 1,713—Chenango							
New York State Woman's Relief Corps Home	Inst	State	61	65	..	...	147
Pelham, 1,918—Westchester							
Pelham Home for Children...	Card	NPAssn	30	22	..	...	24
Pleasantville, 4,454—Westchester							
Pleasantville Cottage School	Inst	NPAssn	24	5	..	...	332
Poughkeepsie, 40,478—Dutchess							
Baldwin House (Vassar College Infirmary)	Inst	NPAssn	35	10	..	...	1,271
Poughkeepsie City Home Infirmary	*Inst*	*City*	47	42	..	...	49
Queens Village, —Queens							
Queens Village Sanatorium...	Gen	Indiv	10	8	8	101	190
Rochester, 324,975—Monroe							
Convalescent Hospital for Children	Conv	*NPAssn*	*60*	*41*	..	...	132
Field Sanitarium	Conv	Indiv	27	No data supplied			
Knorr Sanitarium	Conv	Indiv	28	25	..	...	75
Rockaway Park,—*Queens*							
Convalescent Home for Hebrew Children	OrthConv	NPAssn	52	44	..	...	31
Rye, 9,865—Westchester							
Halcyon Rest Sanitarium	*N&M*	*Indiv*	*52*	*52*	..	...	151
Saranac Lake, 7,138—Franklin							
Franklin Manor	TB	Indiv	15	12	..	...	20
[illegible] S[illegible]	TB	Indiv	20	18	..	..	30
[illegible]							
[illegible]	Mat	Indiv	50	30	50	915	937
Schenectady County Infirmary	Inst	County	66	55	..	...	250
Schenectady Isolation Hosp.⊙	Iso	City	25	13	..	...	613
[illegible]—Erie							
[illegible]	Gen	NPAssn	25	10	6	167	451
[illegible]							
[illegible]	Inst	City	582	519	..	...	1,382
Sailors' Snug Harbor Hosp..	Gen	NPAssn	102	86	..	...	236
State School, —Orange							
Hospital of New York State Training School for Boys	Inst	State	25	7	..	...	508
[illegible]	MeDe	State	1,166	973	..	...	131
American Legion Mountain Camp	*Conv*	*NPAssn*	*51*	32	..	...	129
Valhalla, 2,200—Westchester							
Blythedale Hospital and Home for Crippled Children	Orth	NPAssn	70	55	..	...	110
Wallkill, 800—Ulster							
Wallkill State Prison Hosp...	Inst	State	18	No data supplied			
[illegible]—Dutchess							
[illegible]▲	MeDe	State	4,387	4,875	6	4	292
[illegible]onvales[illegible]	ConvChil	NPAssn	60	50	..	...	97
Woodbourne, 500—Sullivan							
Woodbourne *Institution for Defective Delinquents*	*MeDe*	*State*	793	652	..	..	93
Yonkers, 142,589—Westchester							
Yonkers City Hospital for Communicable Diseases	Iso	City	87	16	..	...	270

NORTH CAROLINA

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Albemarle, 4,060—Stanly							
Stanly General *Hospital*	Gen	NPAssn	45	29	10	123	1,311
Yadkin Hospital	Gen	NPAssn	40	25	11	226	1,491
Asheboro, 6,981—Randolph							
Barnes-Griffin Clinic	Gen	Indiv	23	20	8	231	1,734
Randolph Hospital▲	Gen	NPAssn	50	22	10	220	...
Asheville, 51,310—Buncombe							
Appalachian Hall	N&M	Corp	60	50	..	...	775
Asheville Mission Hospital▲◇	Gen	NPAssn	114	75	16	594	[illegible]

Key to symbols and abbreviations is on page 1091

NORTH CAROLINA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Aston Park Hospital	Gen	NPAssn	45	37	..	33	1,666
Highland Hospital	N&M	NPAssn	85	71	..	...	144
Norburn Hospital	Gen	NPAssn	40	33	2	1	1,461
St. Joseph's Hospital	Gen	Church	107	81	30	939	3,854
U. S. Naval Convalescent Hospital	Conv	Navy	401	338	..	...	2,582
Zephyr Hill Sanatorium	TB	Indiv	21	21	..	...	23
Banner Elk, 344—Avery							
Grace Hospital▲○	Gen	Church	60	41	15	314	1,785
Biltmore, 172—Buncombe							
Biltmore Hospital▲○	Gen	NPAssn	55	43	15	250	1,864
Black Mountain, 1,042—Buncombe							
Fellowship Sanatorium of the Royal League	TB	NPAssn	20	11	..	...	10
Western North Carolina Sanatorium▲	TB	State	300	250	..	...	340
Brevard, 3,061—Transylvania							
Transylvania Community Hospital	Gen	NPAssn	25	9	8	152	587
	TB	County	30	26	..	...	24
	Gen	NPAssn	42	35	5	31	1,782
Camp Lejeune, —Craven							
U. S. Naval Hospital★▲	Gen	Navy	1,950	1,431	40	779	12,298
Charlotte, 100,899—Mecklenburg							
Charlotte Eye, Ear and Throat *Hospital*▲	*ENT*	*Part*	22	19	..	...	2,427
Charlotte Memorial Hosp.★+▲○	Gen	NPAssn	472	320	28	.686	9,025
Good Samaritan Hospital○	Gen	Church	87	90	25	850	4,066
Mercy Hospital+▲○	Gen	Church	150	136	50	1,453	5,714
Presbyterian Hospital▲○	Gen	Church	172	177	32	861	5,824
Western Medical Center	Ven	State	150	120	..	...	4,915
Cherokee, 500—Swain							
Eastern Cherokee Indian Hospital	Gen	IA	28	11	7	82	563
Cherry Point, —Craven							
U. S. Marine Corps Air Station Dispensary	Gen	Navy	307	130	..	...	3,566
Columbia, 1,000—Tyrrell							
Columbia Hospital	Gen	Indiv	21	5	7	210	842
Concord, 15,572—Cabarrus							
Cabarrus County Hospital▲○	Gen	County	152	154	40	1,129	6,885
Crossnore, 266—Avery							
Garrett Memorial Hospital	Gen	NPAssn	20	10	10	70	307
Durham, 60,195—Durham							
Duke Hospital★+▲○	Gen	NPAssn	554	420	50	1,115	12,885
Durham County Tuberculosis Sanatorium	TB	County	54	41	..	...	119
Lincoln Hospital★▲○	Gen	NPAssn	99	70	23	250	2,182
McPherson Hospital▲	ENT	Indiv	30	17	..	...	1,808
U. S. Public Health Service Medical Center	Ven	USPHS	175	114	..	...	3,949
Watts Hospital★+▲○	Gen	NPAssn	200	181	25	1,032	7,482
Elizabeth City, 11,564—Pasquotank							
Albemarle Hospital	Gen	CyCo	100	41	13	160	1,406
Elkin, 2,734—Surry							
Hugh Chatham Memorial Hospital▲	Gen	Church	60	48	12	374	2,766
Fairmont, 1,993—Robeson							
Weinstein Clinic Hospital	Gen	Part	30	13	5	156	480
Fayetteville, 17,428—Cumberland							
Cumberland County Tuberculosis Sanatorium	TB	County	31	30	..	...	56
Highsmith Hospital+▲○	Gen	NPAssn	125	102	24	410	4,725
R. L. Pittman Hospital	Gen	NPAssn	88	62	12	448	2,666
Veterans Admin. Center▲	Gen	Vet	295	227	..	...	2,585
Fletcher, 500—Henderson							
Mountain Sanitarium and Hospital▲○	Gen	Church	60	52	10	87	957
Fort Bragg, —Cumberland							
Regional Hospital▲	Gen	Army	530	174	9	95	7,043
Franklin, 1,249—Macon							
Angel Clinic	Gen	Indiv	30	20	2	25	701
Angel Hospital	Gen	NPAssn	56	28	6	124	1,465
Gastonia, 21,313—Gaston							
Garrison General Hospital▲	Gen	NPAssn	49	41	16	601	1,744
Gaston County Negro Hosp.	Gen	County	22	9	2	60	509
Gaston Memorial Hospital	Gen	Corp	70	30	15	288	1,930
North Carolina Orthopedic Hospital+▲	Orth	State	145	145	..	...	274
Goldsboro, 17,274—Wayne							
Goldsboro Hospital▲○	Gen	NPAssn	126	73	24	560	4,072
State Hospital	Ment	State	2,500	2,491	..	...	641
Greensboro, 59,319—Guilford							
Piedmont Memorial Hosp.▲	Gen	NPAssn	61	45	17	294	2,071
L. Richardson Memorial Hospital▲○	Gen	NPAssn	60	45	8	341	1,966
St. Leo's Hospital▲○	Gen	Church	85	68	20	539	3,162
Sternberger Hospital for Women and Children▲⊙	Gen	NPAssn	50	35	16	346	2,103
Wesley Long Hospital▲	Gen	NPAssn	78	63	16	353	2,513
Greenville, 12,674—Pitt							
Pitt General Hospital	Gen	NPAssn	63	37	11	262	2,608
Hamlet, 5,111—Richmond							
Hamlet Hospital○	Gen	NPAssn	65	...	10	...	...
Henderson, 7,647—Vance							
Jubilee Hospital	Gen	Church	35	27	4	97	1,008
Maria Parham Hospital▲	Gen	NPAssn	53	60	17	331	2,530
Hendersonville, 5,381—Henderson							
Patton Memorial Hospital	Gen	NPAssn	44	34	18	386	2,280

NORTH CAROLINA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Hickory, 13,487—Catawba							
Hickory Memorial Hospital▲	Gen	NPAssn	34	28	6	123	1,028
Richard Baker Hospital▲	Gen	Indiv	55	35	22	582	1,977
High Point, 38,495—Guilford							
High Point Memorial Hosp.▲○	Gen	NPAssn	120	104	26	1,032	4,834
Huntersville, 763—Mecklenburg							
Mecklenburg Sanatorium▲	TB	County	160	120	..	...	134
Jacksonville, 873—Onslow							
Onslow County Hospital	Gen	NPAssn	40	25	15	440	1,050
Jamestown, 900—Guilford							
Guilford County Sanatorium▲	TB	County	126	88	..	...	143
Jefferson, 304—Ashe							
Ashe County Memorial Hosp.	Gen	NPAssn	28	20	6	223	1,115
Kinston, 15,388—Lenoir							
Memorial General Hospital▲○	Gen	NPAssn	68	65	12	469	3,188
Parrott Memorial Hospital	Gen	NPAssn	40	32	5	425	2,234
Laurinburg, 5,685—Scotland							
Laurinburg Hospital	Gen	NPAssn	39	17	8	172	489
Leaksville, 1,886—Rockingham							
Leaksville General Hosp.▲○	Gen	NPAssn	45	37	5	367	2,400
Lenoir, 7,598—Caldwell							
Blackwelder Hospital▲	Gen	NPAssn	30	22	10	362	1,364
Caldwell Hospital▲	Gen	NPAssn	35	24	8	209	1,204
Lexington, 10,550—Davidson							
Lexington Memorial Hospital	Gen	NPAssn	26	20	6	388	1,638
Lincolnton, 4 525—Lincoln							
Gordon Crowell Memorial Hospital▲○	Gen	Corp	54	48	8	254	2,117
Reeves Gamble Hospital	Gen	NPAssn	35	34	6	187	1,260
Lumberton, 5,803—Robeson							
Baker Sanatorium○	Gen	NPAssn	80	65	15	320	4,005
Thompson Memorial Hosp.○	Gen	NPAssn	75	64	16	616	3,218
Marion, 2,889—McDowell							
Marion General Hospital	Gen	NPAssn	42	29	12	471	2,207
Monroe, 6,475—Union							
Ellen Fitzgerald Hospital▲	Gen	NPAssn	60	42	10	446	1,948
Mooresville, 6,682—Iredell							
Lowrance Hospital▲○	Gen	NPAssn	60	56	12	384	2,836
Morehead City, 3,695—Carteret							
Morehead City Hospital	Gen	City	40	32	12	371	1,177
Morganton, 7,670—Burke							
Broadoaks Sanatorium	N&M	Part	75	41	..	...	57
Grace Hospital▲○	Gen	NPAssn	82	64	18	484	4,103
State Hospital	Ment	State	2,782	2,705	..	...	497
Mount Airy, 6,286—Surry							
Martin Memorial Hospital▲○	Gen	NPAssn	60	63	14	307	2,270
Murphy, 1,873—Cherokee							
Petrie Hospital	Gen	NPAssn	25	16	12	109	785
Nashville, 1,171—Nash							
Nash County Tuberculosis Sanatorium	TB	County	32	24	..	...	64
New Bern, 11,815—Craven							
Good Shepherd Hospital	Gen	Church	55	23	4	77	510
St. Luke's Hospital	Gen	Church	46	29	20	318	2,118
Newton, 5,407—Catawba							
Catawba General Hospital	Gen	NPAssn	37	38	10	407	1,856
North Wilkesboro, 4,478—Wilkes							
Wilkes Hospital▲	Gen	NPAssn	60	34	11	335	2,036
Oteen, 1,200—Buncombe							
Veterans Admin. Hospital▲	TB	Vet	1,266	1,075	..	...	1,940
Oxford, 3,991—Granville							
Granville Hospital	Gen	NPAssn	36	23	9	144	1,102
Susie Clayton Cheatham Memorial Hospital	Gen	NPAssn	16	11	1	61	532
Pinebluff, 330—Moore							
Pinebluff Sanitarium	N&M	Indiv	40	32	..	...	290
Pinehurst, 1,600—Moore							
Moore County Hospital▲	Gen	NPAssn	85	70	16	429	2,945
Raleigh, 46,897—Wake							
Central Prison Hospital	Inst	State	134	49	..	...	778
Mary Elizabeth Hospital○	Gen	Corp	52	42	10	303	1,691
Rex Hospital★▲○	Gen	NPAssn	290	210	36	987	8,210
Royster Medical Center▲	Unit of State Hospital						
St. Agnes Hospital★▲○	*Gen*	*Church*	*100*	*68*	*18*	*340*	*2,009*
State Hospital▲○	Ment	State	2,633	2,495	..	...	784
Wake County Sanatorium	TB	CyCo	58	56	..	...	62
Reidsville, 10,387—Rockingham							
Annie Penn Memorial Hosp.	Gen	NPAssn	77	60	10	293	3,134
Roanoke Rapids, 8,545—Halifax							
Roanoke Rapids Hospital○	Gen	NPAssn	100	103	22	560	5,123
Rocky Mount, 25,568—Nash							
Atlantic Coast Line Hosp.▲	Indus	NPAssn	50	32	..	...	870
Park View Hospital+▲○	*Gen*	*NPAssn*	*110*	*90*	*19*	*401*	*2,516*
Rocky Mount Sanitarium▲○	Gen	NPAssn	76	47	11	377	2,566
Speight-Stone-Bunn Clinic-Hospital	Gen	Part	14	10	6	217	955
Roseboro, 939—Sampson							
Brewer-Starling Clinic	Gen	Part	9	4	5	213	454
Roxboro, 4,599—Person							
Community Hospital	Gen	NPAssn	15	...	7	...	...
Rutherfordton, 2,326—Rutherford							
Rutherford Hospital+▲○	*Gen*	NPAssn	*61*	*40*	*8*	265	2,561
Salisbury, 19,037—Rowan							
Rowan Memorial Hospital▲○	Gen	NPAssn	120	89	23	736	4,016
Sanatorium, 200—Hoke							
North Carolina Sanatorium for the Treatment of Tuberculosis▲○	TB	State	600	505	..	...	633
Sanford, 4,960—Lee							
Lee County Hospital▲	Gen	County	59	43	12	450	2,471
Shelby, 14,037—Cleveland							
Shelby Hospital▲○	Gen	CyCo	101	63	29	770	3,537

Key to symbols and abbreviations is on page 1091

NORTH CAROLINA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Siler City, 2,197—Chatham							
Chatham Hospital	Gen	NPAssn	18	14	5	163	972
Smithfield, 3,678—Johnston							
Johnston County Hospital	Gen	NPAssn	35	30	10	280	1,121
Southport, 1,760—Brunswick							
J. Arthur Dosher Memorial Hospital	Gen	CyCo	50	19	8	107	860
▲	Gen	NPAssn	130	102	17	377	4,221
▲	Gen	NPAssn	69	55	9	275	2,601
Sylva, 1,409—Jackson							
C. J. Harris Community Hospital	Gen	NPAssn	33	15	9	131	806
Tarboro, 7,148—Edgecombe							
Bass Memorial Hospital	Gen	Indiv	8	4	5	21	149
Edgecombe General Hospital▲	Gen	NPAssn	55	34	10	234	1,964
Thomasville, 11,041—Davidson							
City Memorial Hospital	Gen	NPAssn	50	27	16	365	1,709
Tryon, 2,043—Polk							
St. Luke's Hospital	Gen	NPAssn	28	14	8	123	885
Valdese, 2,615—Burke							
Valdese General Hospital	Gen	NPAssn	44	30	12	174	1,668
Wadesboro, 3,587—Anson							
Anson Sanatorium	Gen	NPAssn	40	25	10	187	1,057
Washington, 8,569—Beaufort							
Fowle Memorial Hospital	Gen	Indiv	16	13	6	115	513
Tayloe Hospital▲○	Gen	NPAssn	69	48	10	532	2,369
	Gen	County	75	42	10	512	1,917
	Gen	NPAssn	60	42	17	495	2,556
	Gen	Indiv	35	17	7	91	775
	Chil	NPAssn	35	25	6	...	1,348
	Gen	Corp	27	19	..	...	889
	Gen	CyCo	125	82	26	623	2,980
James Walker Memorial Hospital★▲○	Gen	NPAssn	271	194	60	1,619	8,636
ital▲○	Gen	NPAssn	52	38	14	367	1,768
Sanatorium	TB	State	185	184	..	...	191
Mercy Hospital	Gen	NPAssn	41	19	2	63	582
Wilson County Tuberculosis Sanatorium	TB	County	40	24	..	...	45
	Gen	NPAssn	73	59	9	251	2,270
▲	Gen	City	397	250	43	1,441	9,429
City Memorial Hospital	White Division of City Hospital						
Forsyth County Hospital	Gen	County	150	123	6	61	270
Forsyth County Sanatorium▲	TB	County	132	89	..	...	77
Kate Bitting Reynolds Memorial Hospital▲○	Colored Division of City Hospital						
North Carolina Baptist Hospital★+▲○	Gen	Church	270	213	50	999	9,468

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Asheville, 51,310—Buncombe							
Orthopedic Home	Orth	NPAssn	28	23	..	...	127
	Gen	Church	30	16	3	4	172
	TB	Indiv	21	15	..	...	...
	TB	Indiv	37	37	..	...	25
	Mat	NPAssn	30	26	20	67	93
Davidson, 1,550—Mecklenburg							
Preyer Infirmary	Inst	NPAssn	27	2	..	...	82
Goldsboro, 17,274—Wayne							
Whispering Cedars Rest Home	Conv	Indiv	12	7	..	...	324
Halifax, 374—Halifax							
Halifax County Sanitarium	TB	County	27	18	..	...	30
7,647—Vance							
	TB	County	14	7	..	...	9
	MeDe	State	820	814	..	...	63
Raleigh, 46,897—Wake							
Clark Hall Hospital	Inst	State	90	5	..	...	736
McCauley Private Hospital	Gen	Indiv	10	14	2	31	145
bercu-	TB	County	30	27	..	...	28
syth	Gen	Indiv	18	3	8	71	321

NORTH DAKOTA

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
900—Rolette							
ital	Gen	IA	42	24	10	122	970
osp.▲○	Gen	Church	155	133	25	306	4,007
	Gen	Church	174	133	31	722	6,391
Bottineau							
St. Andrew's Hospital○	Gen	Church	80	57	12	215	2,105
Carrington, 1,850—Foster							
Carrington Hospital	Gen	Church	25	18	8	76	620
Crosby, 1,404—Divide							
St. Luke's Hospital	Gen	Church	42	11	8	98	467
Devils Lake, 6,204—Ramsey							
General Hospital▲	Gen	NPAssn	50	38	6	101	750
Mercy Hospital▲○	Gen	Church	100	61	26	317	2,478

NORTH DAKOTA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Dickinson, 5,839—Stark							
St. Joseph's Hospital▲	Gen	Church	80	51	18	412	2,470
Drayton, 688—Pembina							
Drayton Hospital	Gen	Indiv	13	10	6	75	415
Elbowoods, 175—McLean							
Fort Berthold Indian Hosp.	Gen	IA	25	13	6	45	465
Fargo, 32,580—Cass							
St. John's Hospital+▲○	Gen	Church	175	171	35	977	6,573
St. Luke's Hospital▲○	Gen	Church	120	101	18	526	4,767
Veterans Admin. Center▲	Gen	Vet	179	156	..	...	1,396
Fort Totten, 100—Benson							
Fort Totten Indian Hospital	Gen	IA	31	17	4	36	535
Fort Yates, 1,000—Sioux							
Standing Rock Indian Hosp.	Gen	IA	47	20	5	56	435
Grafton, 4,070—Walsh							
Grafton Deaconess Hospital	Gen	Church	60	47	12	400	1,704
Grand Forks, 20,228—Grand Forks							
Grand Forks Deaconess Hospital▲○	Gen	NPAssn	100	87	25	525	3,896
St. Michael's Hospital▲○	Gen	Church	65	65	15	371	2,563
Harvey, 1,851—Wells							
St. Aloisius Hospital	Gen	Church	56	18	12	270	1,407
Jamestown, 8,790—Stutsman							
Jamestown Hospital▲	Gen	NPAssn	59	57	12	219	2,220
North Dakota State Hospital for Insane▲	Ment	State	2,018	2,008	..	...	418
Trinity Hospital▲○	Gen	Church	94	93	12	280	2,461
Kenmare, 1,528—Ward							
Kenmare Deaconess Hospital	Gen	Church	33	22	8	166	1,131
Langdon, 1,546—Cavalier							
Mercy Hospital	Gen	Church	35	23	14	302	1,619
Mandan, 6,685—Morton							
Mandan Deaconess Hospital	Gen	Church	35	22	10	196	991
Mayville, 1,351—Traill							
Union Hospital	Gen	NPAssn	18	12	7	145	560
Minot, 16,577—Ward							
St. Joseph's Hospital▲○	Gen	Church	131	122	19	410	4,030
Trinity Hospital★+▲○	Gen	Church	188	166	32	814	6,061
New Rockford, 2,017—Eddy							
City Hospital	Gen	Church	40	35	9	166	1,883
Northwood, 1,003—Grand Forks							
Northwood Deaconess Hosp.	Gen	NPAssn	24	18	6	138	610
Oakes, 1,665—Dickey							
Mercy Hospital	Gen	Church	15	11	7	120	511
Rolette, 460—Rolette							
Community Hospital	Gen	NPAssn	19	8	4	51	559
Rolla, 1,088—Rolette							
Rolla Community Hospital	Gen	City	26	18	7	126	917
Rugby, 2,215—Pierce							
Good Samaritan Hospital▲○	Gen	Church	70	58	15	318	2,910
San Haven, —Rolette							
North Dakota State Tuberculosis Sanatorium▲	TB	State	350	231	..	...	185
ospital	Gen	City	15	12	5	81	621
	Gen	Church	100	62	15	400	3,978
	Gen	Church	25	14	7	101	515
Good Samaritan Hospital▲	Gen	NPAssn	40	32	12	228	1,225
Mercy Hospital▲	Gen	Church	75	38	20	311	1,978

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Elgin, 683—Grant							
Elgin Hospital	Gen	Indiv	20	10	7	135	621
Fargo, 32,580—Cass							
Cass County Hospital	Gen	County	65	15	5	7	173
City Detention Hospital	Iso	City	64	No data supplied			
Florence Crittenton Home	Mat	NPAssn	56	18	6	61	82
Grafton, 4,070—Walsh							
Grafton State School	MeDe	State	1,000	958	..	...	51

OHIO

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Akron, 244,791—Summit							
Akron Clinic Hospital	Gen	Part	9	6	..	...	509
Children's Hospital+▲○	Chil	NPAssn	110	115	..	...	5,119
City Hospital★+▲○	Gen	NPAssn	425	309	48	3,069	12,501
Edwin Shaw Sanatorium▲	TB	County	122	114	..	...	175
Peoples Hospital★+▲○	Gen	NPAssn	210	187	50	1,706	7,218
St. Thomas Hospital★+▲○	Gen	Church	205	153	30	1,282	7,129
Alliance, 22,405—Stark							
Alliance City Hospital○	Gen	City	92	68	21	692	2,776
Amherst, 2,896—Lorain							
Pleasant View Sanatorium	TB	County	82	71	..	...	81
Ashland, 12,453—Ashland							
Samaritan Hospital○	Gen	NPAssn	48	31	12	461	1,476
Ashtabula, 21,405—Ashtabula							
Ashtabula General Hospital	Gen	NPAssn	72	51	10	515	2,461
Athens, 7,696—Athens							
Athens State Hospital	Ment	State	1,875	1,786	..	...	231
Sheltering Arms Hospital	Gen	Part	45	30	9	311	1,402
—Summit							
	Gen	NPAssn	72	51	25	629	2,276
	Gen	NPAssn	16	7	6	141	575
Bedford, 7,390—Cuyahoga							
Bedford Municipal Hospital	Gen	City	27	26	13	219	1,531

Key to symbols and abbreviations is on page 1091

OHIO—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Bellaire, 13,799—Belmont							
City Hospital▲	Gen	NPAssn	45	30	5	339	1,148
Bellevue, 6,127—Huron							
Bellevue Hospital	Gen	NPAssn	36	22	11	197	830
▲	Gen	NPAssn	100	32	34	347	1,326
▲	Gen	Vet	364	284	..	...	3,463
Bryan, 5,404—Williams							
Cameron Hospitals	Gen	NPAssn	16	15	3	209	690
Bucyrus, 9,727—Crawford							
Bucyrus City Hospital	Gen	City	51	53	14	370	1,464
Cambridge, 15,044—Guernsey							
St. Francis Hospital	Gen	NPAssn	28	27	7	225	1,616
Swan Hospital	Gen	NPAssn	30	18	6	178	671
Canton, 108,401—Stark							
Aultman Hosptial★+▲○	Gen	NPAssn	246	182	56	1,557	7,776
Little Flower Hospital	Unit of Mercy Hospital						
Mercy Hospital★+▲○	Gen	Church	220	176	45	1,698	8,080
Molly Stark Sanatorium	TB	County	166	100	..	...	164
Celina, 4,841—Mercer							
Gibbons Hospital	Gen	NPAssn	31	25	10	508	1,267
Otis Hospital	Gen	NPAssn	22	18	5	103	618
Chagrin Falls, 2,505—Cuyahoga							
Windsor Hospital▲	N&M	Corp	90	84	..	...	536
Chillicothe, 20,129—Ross							
Chillicothe Hospital▲	Gen	NPAssn	55	41	17	424	1,225
Federal Reformatory Hosp.▲	Inst	USPHS	70	26	..	...	835
Mount Logan Sanatorium	TB	*Counties*	65	50	..	...	67
Veterans Admin. Hospital▲	Ment	Vet	2,013	1,854	..	...	687
Cincinnati, 455,610—Hamilton							
Bethesda Hospital★▲○	Gen	Church	211	258	52	2,026	9,130
Children's Hospital+▲⊙	Chil	Church	208	160	..	...	6,086
Christ Hospital★+▲○	Gen	Church	328	310	58	1,854	10,461
Christian R. Holmes Hosp.▲	Gen	City	52	50	..	..	1,341
Cincinnati General Hosp.★+▲○	Gen	City	900	612	65	1,679	18,838
Cincinnati Sanitarium▲	N&M	Corp	90	88	..	...	390
Deaconess Hospital★+▲○	Gen	Church	168	136	30	723	4,443
Dunham Hospital+▲⊙	TB	County	449	406	..	...	446
Good Samaritan Hosp★+▲○	Gen	Church	539	452	125	2,445	15,934
Hamilton County Home and Chronic Disease Hospital	Chr	County	250	253	..	...	369
Jewish Hospital★+▲○	Gen	NPAssn	260	244	40	1,480	7,841
Longview State Hospital+▲	Ment	State	2,939	2,867	..	...	554
Ohio Hospital for Women and Children	Unit of Bethesda Hospital						
Our Lady of Mercy Hospital	Gen	Church	54	44	18	572	1,700
St. Mary's Hospital★▲	Gen	Church	200	135	30	585	4,922
Circleville, 7,982—Pickaway							
Berger Municipal Hospital	Gen	City	23	14	12	278	704
Cleveland, 878,336—Cuyahoga							
Babies and Childrens Hosp.	Unit of University Hospitals						
Booth Memorial Home and Hospital▲	Mat	Church	27	16	26	545	569
City Hospital★+▲○	Gen	City	1,586	1,156	56	635	11,259
City Psychopathic Hospital	Unit of City Hospital						
Cleveland Clinic Foundation Hospital★+▲	Gen	NPAssn	259	225	..	...	7,185
Cleveland State Hospital⊙	Ment	State	3,062	2,834	..	...	418
Evangelical Deaconess Hosp.▲	Gen	Church	132	130	32	1,253	5,375
Fairview Park Hosp.★+▲○	Gen	Church	150	139	51	1,836	6,735
Glenville Hospital+▲	Gen	NPAssn	105	80	30	815	3,380
Grace Hospital+▲	Gen	NPAssn	68	47	12	359	2,432
Huron Road Hospital	See East Cleveland						
John H. Lowman Memorial Pavilion	Unit of City Hospital						
Lakeside Hospital	Unit of University Hospitals						
Leonard C. Hanna House	Unit of University Hospitals						
Lutheran Hospital★+▲○	Gen	Church	127	117	33	1,081	4,926
Maternity Hospital	Unit of University Hospitals						
Mount Sinai Hospital★+▲○	Gen	NPAssn	225	190	45	1,173	7,951
Polyclinic Hospital▲	Gen	NPAssn	120	102	24	842	4,576
St. Alexis Hospital★+▲○	Gen	Church	234	187	25	17	7,768
St. Ann's Maternity Hosp.▲⊙	Mat	Church	60	46	60	1,805	1,862
St. John's Hospital★+▲○	Gen	Church	234	210	41	1,497	7,997
St. Luke's Hospital★+▲○	Gen	Church	311	271	65	1,831	10,526
St. Vincent Charity Hospital★+▲○	Gen	Church	290	233	..	...	7,315
U. S. Marine Hospital▲	Gen	USPHS	300	251	..	...	3,473
University Hospitals★+▲○	Gen	NPAssn	656	522	93	3,357	17,812
Woman's Hospital+▲	Gen	NPAssn	99	77	24	586	4,065
Columbus, 306,087—Franklin							
Children's Hospital+▲⊙	Chil	NPAssn	132	86	..	...	2,878
Columbus State Hospital+▲⊙	Ment	State	2,517	2,495	..	...	576
Franklin County Tuberculosis Hospital+▲⊙	TB	County	300	258	..	...	376
Grant Hospital★▲○	Gen	NPAssn	273	270	40	1,531	9,030
McMillen Sanitarium	N&M	Corp	40	27	..	...	232
Mercy Hospital▲	Gen	NPAssn	65	50	15	221	1,113
Mount Carmel Hosp.★+▲○	Gen	Church	250	238	50	1,847	8,526
St. Ann's Maternity Hosp.▲	Mat	Church	28	28	28	1,166	1,240
St. Anthony Hospital	Gen	Church	207	182	..	...	2,678
St. Francis Hospital★+▲○	Gen	State	160	107	..	...	3,415
Starling-Loving University Hospital★+▲○	Gen	State	279	251	35	1,030	8,246
Station Hospital▲	Gen	Army	130	119	3	29	2,163
White Cross Hospital★+▲○	Gen	Church	290	246	62	1,902	9,619
Conneaut, 9,355—Ashtabula							
Brown Memorial Hospital	Gen	NPAssn	30	25	11	335	1,402
Coshocton, 11,509—Coshocton							
Coshocton City Hospital○	Gen	City	65	55	20	464	3,191

OHIO—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Crestline, 4,337—Crawford							
Crestline Emergency Hosp.	Gen	NPAssn	20	10	7	118	355
Cuyahoga Falls, 20,546—Summit							
Fair Oaks Villa Sanitarium	N&M	NPAssn	65	57	..	...	688
Dayton, 210,718—Montgomery							
Dayton State Hospital▲	Ment	State	1,867	1,723	..	...	495
Good Samaritan Hospital★▲○	Gen	Church	310	250	65	2,695	9,980
Miami Valley Hospital★+▲○	Gen	NPAssn	465	330	55	1,913	10,784
St. Ann's Maternity Hospital	Unit of St. Elizabeth Hospital						
St. Elizabeth Hospital★▲○	Gen	Church	335	273	40	2,051	9,126
Stillwater Sanatorium▲	TB	Counties	104	100	..	...	159
Defiance, 9,744—Defiance							
Defiance Hospital	Gen	NPAssn	34	23	11	404	1,300
Dennison, 4,413—Tuscarawas							
Twin City Hospital	Gen	NPAssn	35	25	10	348	1,233
Dover, 9,691—Tuscarawas							
Union Hospital	Gen	NPAssn	60	48	15	544	1,959
East Cleveland, 39,495—Cuyahoga							
Huron Road Hospital★+▲○	Gen	NPAssn	271	230	81	2,387	12,859
East Liverpool, 23,555—*Columbiana*							
East Liverpool CityHosp.▲○	Gen	City	123	91	21	738	3,311
Elyria, 25,120—Lorain							
Elyria Memorial Hospital and Gates Hospital for Crippled Children▲○	Gen	NPAssn	139	99	33	651	3,426
Fairfield, 2,549—Greene							
Regional Hospital+▲	Gen	Army	40	11	..	...	687
Findlay, 20,228—Hancock							
Findlay Hospital▲	Gen	NPAssn	64	51	12	663	2,969
Fremont, 14,710—Sandusky							
Community Hospital	Gen	NPAssn	16	11	4	63	466
Memorial Hospital▲	Gen	NPAssn	62	50	17	576	2,341
Galion, 8,685—Crawford							
Galion City Hospital	Gen	City	33	24	8	312	1,969
Gallipolis, 7,832—Gallia							
Gallipolis State Institute	Epil	State	1,932	1,990	..	...	318
Holzer Hospital▲○	Gen	Part	70	56	9	420	2,749
Green Springs, 930—Sandusky and Seneca							
Oak Ridge Sanatorium	TB	Indiv	75	65	..	...	98
Greenville, 7,745—Darke							
Wayne Hospital▲	Gen	NPAssn	50	44	18	461	1,812
Hamilton, 50,592—Butler							
Fort Hamilton Hospital▲	Gen	NPAssn	86	62	24	516	2,473
Mercy Hospital★▲○	Gen	Church	240	165	50	1,060	6,647
Hillsboro, 4,713—Highland							
Hillsboro Hospital	Gen	NPAssn	20	11	4	112	434
Ironton, 15,851—Lawrence							
Charles S. Gray Deaconess Hospital	Gen	NPAssn	25	8	5	122	495
Lawrence County General Hospital	Gen	County	68	48	14	517	2,224
Kenton, 7,593—Hardin							
McKitrick Hospital	Gen	NPAssn	30	27	8	141	971
San Antonio Hospital	Gen	Church	51	39	8	299	1,269
Lacarne, 200—Ottawa							
Station Hospital	Gen	Army	28	2	..	...	91
Lakewood, 69,160—Cuyahoga							
Lakewood Hospital★▲	Gen	City	129	108	28	889	4,677
Lancaster, 21,940—Fairfield							
Lancaster Municipal Hosp.▲○	Gen	City	74	62	20	616	3,068
Lebanon, 3,890—Warren							
Blair Brothers Hospital	Gen	Part	8	7	3	133	367
Lima, 44,711—Allen							
District Tuberculosis Hospital	TB	*Counties*	116	100	..	...	153
Lima Memorial Hospital★▲○	Gen	NPAssn	161	138	21	951	5,089
Lima State Hospital	Ment	State	1,200	1,141	..	...	230
St. Rita's Hospital★▲○	Gen	Church	155	156	30	1,125	5,002
Lodi, 1,304—Medina							
Lodi Hospital	Gen	NPAssn	40	32	10	401	1,519
Lorain, 44,125—Lorain							
St. Joseph's Hospital▲	Gen	Church	130	84	32	934	4,196
Macedonia, 734—Summit							
Hawthornden State Hospital	*Ment*	*State*	*1,070*	*955*	..	...	268
Mansfield, 37,154—Richland							
Mansfield General Hosp.+▲○	Gen	NPAssn	161	148	39	1,081	5,116
Richland County Tuberculosis Sanatorium	TB	County	28	22	..	...	46
Marietta, 14,543—Washington							
Marietta Memorial Hospital	Gen	NPAssn	53	41	12	437	1,800
Marion, 30,817—Marion							
Marion City Hospital	Gen	City	134	109	30	850	4,002
Sawyer Sanatorium▲	N&M	Indiv	50	23	..	...	114
Martins Ferry, 14,729—Belmont							
Martins Ferry Hospital▲○	Gen	NPAssn	100	87	15	676	4,021
Massillon, 26,644—Stark							
Massillon City Hospital▲○	Gen	NPAssn	174	107	34	935	4,614
Massillon State Hospital+▲○	Ment	State	3,420	3,342	..	...	750
McConnelsville, 1,895—Morgan							
Rocky Glen Sanatorium	TB	Corp	135	109	..	...	152
Medina, 4,359—Medina							
Medina Community Hospital.	Gen	NPAssn	36	27	12	205	1,097
Middletown, 31,220—Butler							
Middletown Hospital▲○	Gen	NPAssn	159	106	40	1,053	3,067
Millersburg, 2,239—Holmes							
Holmes County Joel E. Pomerene Memorial Hospital	Gen	County	31	13	5	187	953
Mount Vernon, 10,122—Knox							
Avalon Sanatorium	TB	NPAssn	75	30	..	...	81
Mercy Hospital	Gen	Church	66	49	12	500	3,041
Mount Vernon Hospital-Sanitarium	Gen	NPAssn	52	43	8	115	1,458
Ohio State Sanatorium▲	TB	State	175	93	..	...	131

OHIO—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Munroe Falls, 511—Summit							
Summit County Hospital	GenInst	County	150	121	..	...	144
Napoleon, 4,825—Henry							
S. M. Heller *Memorial Hosp.*	Gen	City	20	13	8	187	741
National Military Home, —Montgomery							
Veterans Admin. Hospital▲	*Gen*	*Vet*	*1,052*	*891*	..	...	5,422
Newark, 31,487—Licking							
Licking County Tuberculosis Sanatorium	TB	County	57	*31*	..	...	62
Newark Hospital▲○	Gen	NPAssn	117	*77*	*26*	*730*	*3,193*
New London, 1,656—Huron							
New London Hospital	Gen	NPAssn	*9*	5	3	70	*258*
New Philadelphia, 12,328—Tuscarawas							
Tuscarawas Valley Sanat.	TB	County	35	24	..	...	31
Norwalk, 8,211—Huron							
Norwalk Memorial Hospital	Gen	NPAssn	27	18	15	*333*	*1,018*
Oberlin, 4,305—Lorain							
Allen Hospital, Oberlin Coll.▲	Gen	NPAssn	45	26	11	227	1,206
Oxford, 2,756—Butler							
Miami University Student *Hospital*	Inst	*State*	*50*	4	..	...	*700*
Painesville, *12,235—Lake*							
Lake County Memorial Hosp.	Gen	County	125	87	20	713	2,816
Perrysburg, 3,457—Wood							
Rheinfrank Hospital	Goiter	Indiv	11	3	..	...	247
Piqua, 16,049—Miami							
Memorial Hospital▲	Gen	NPAssn	80	72	20	671	3,467
Port Clinton, 4,505—Ottawa							
H. B. Magruder Memorial Hospital	*Gen*	*NPAssn*	*43*	36	17	290	1,780
Portsmouth, 40,466—Scioto							
Mercy Hospital○	Gen	Church	71	65	16	455	3,984
Portsmouth General Hosp.○	Gen	City	100	83	16	480	3,338
Ravenna, 8,538—Portage							
Robinson *Memorial Portage County Hospital*	Gen	County	112	63	33	734	2,841
St. Clairsville, 2,797—Belmont							
Belmont Sanatorium	TB	*County*	50	43	..	...	51
	Gen	NPAssn	34	28	8	250	995
▲	*Gen*	NPAssn	56	56	14	446	2,294
Sandusky, 24,874—Erie							
pital▲	Gen	NPAssn	53	42	12	267	1,703
▲	Gen	Church	110	75	25	376	2,377
Shelby Memorial Hospital	Gen	NPAssn	54	27	16	213	1,287
Sidney, 9,790—Shelby							
Wilson Memorial Hospital▲	Gen	NPAssn	65	45	12	420	2,405
South Euclid, 6,146—Cuyahoga							
Rainbow Hospital for Crippled and Convalescent Children▲	Unit of University Hospitals, *Cleveland*						
Springfield, 70,662—Clark							
Clark County Tuberculosis	TB	County	120	75	..	...	124
★▲○	Gen	City	276	189	56	1,649	7,166
Gill Memorial Hospital	Gen	Church	65	59	15	*574*	*2,690*
Ohio Valley Hospital▲○	Gen	NPAssn	210	168	40	1,022	5,864
Tiffin, 16,102—Seneca							
Mercy Hospital	Gen	Church	47	42	14	519	2,280
Toledo, 282,349—Lucas							
East Side Hospital	Gen	NPAssn	36	16	5	69	577
Flower Hospital★▲○	Gen	Church	135	122	37	913	4,723
Maumee Valley Hospital★+▲○	Gen	County	292	140	33	137	2,855
Mercy Hospital★+▲○	Gen	Church	260	246	60	1,902	9,261
Riverside Hospital★▲○	Gen	NPAssn	154	139	44	975	4,316
Robinwood Hospital▲○	Gen	Church	105	83	15	317	3,072
St. Vincent's Hospital★+▲○	Gen	Church	345	324	50	1,160	11,018
Toledo Hospital★+▲○	Gen	NPAssn	270	207	50	1,565	8,088
Toledo State Hospital▲○	Ment	State	*2,928*	2,839	..	...	821
William W. Roche Memorial Tuberculosis Hospital	TB	County	165	125	..	...	209
Troy, 9,697—Miami							
Stouder Memorial Hospital▲	Gen	NPAssn	50	51	14	550	2,189
Urbana, 8,335—Champaign							
Champaign County Hospital	Gen	County	46	25	15	265	792
Van Wert, 9,227—Van Wert							
Van Wert County Hospital	Gen	NPAssn	62	37	12	356	1,718
Wadsworth, 6,495—Medina							
Wadsworth Municipal Hosp.	Gen	City	37	22	16	360	1,020
Warren, 42,837—Trumbull							
St. Joseph's Riverside Hosp.▲	Gen	Church	123	62	27	702	3,654
County Tuberculosis	TB	County	48	37	..	...	46
▲○	Gen	NPAssn	188	135	30	1,049	6,349
O.), 1,175—Cuyahoga							
County Tuberculosis Hospital+▲⊙	TB	County	*433*	*333*	..	...	323
Wauseon, 3,016—Fulton							
De Ette *Harrison Detwiler* Memorial Hospital▲	Gen	NPAssn	51	36	11	395	1,907
Willard, 4,261—Huron							
Willard Municipal Hospital	Gen	*City*	31	25	10	154	947
Wilmington, 5,971—Clinton							
Dr. Kelley Hale Surgical Hospital	Gen	Indiv	15	8	7	53	358
Wooster, 11,543—Wayne							
Beeson Hospital	Gen	NPAssn	30	24	10	293	1,395
Community Hospital	Gen	NPAssn	25	18	8	171	613
Worthington, 1,569—*Franklin*							
Harding Sanitarium+▲	N&M	Corp	*55*	*49*	..	...	255
Xenia, 10,633—Greene							
McClellan *Hospital*▲	Gen	Corp	20	16	4	132	*501*
Youngstown, 167,720—*Mahoning*							
Mahoning Tuberculosis Sanat.	*TB*	County	180	150	..	...	225
St. Elizabeth's *Hospital*★+▲○	*Gen*	Church	290	274	50	1,669	10,652
Youngstown Hospital★+▲○	*Gen*	*NPAssn*	*540*	491	82	2,430	17,297
Zanesville, 37,500—Muskingum							
Bethesda Hospital▲○	Gen	NPAssn	105	79	25	649	2,774
Good *Samaritan Hospital*▲○	Gen	Church	*137*	*105*	*27*	*758*	*3,503*

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Akron, 244,791—Summit							
Goodyear Hospital	Indus	NPAssn	18	10	..	...	295
Apple Creek, 510—Wayne							
Apple Creek State School	MeDe	State	793	712	..	...	101
Bluffton, 2,077—*Allen*							
Bluffton Community *Hosp.*	Gen	*NPAssn*	*22*	*15*	*7*	181	529
Cincinnati, 455,610—Hamilton							
Catherine Booth Home and *Hospital*	Mat	*Church*	71	14	13	*362*	*516*
Children's Convalescent Home of the Cincinnati Orphan *Asylum*▲	Inst	NPAssn	100	69	..	...	185
Children's Home	Inst	NPAssn	25	4	..	...	289
Home *for Incurables*	Incur	NPAssn	68	...	..	...	...
Madeline Marie Nursing Home	Conv	Part	72	65	..	...	105
Maple Knoll Hospital and Home for the Friendless	MatChil	NPAssn	50	38	16	224	517
St. Francis Hospital	ChrCancer	Church	300	256	..	...	1,785
St. Joseph Maternity Hospital and Infant Home	Mat	Church	9	6	9	191	189
Cleveland, *878,336*—Cuyahoga							
Children's Fresh Air Camp and Hospital	Conv	NPAssn	*60*	*59*	..	...	178
Ingleside Home	N&M	NPAssn	*120*	110	..	...	560
Columbus, 306,087—Franklin							
Columbus State School	MeDe	State	2,131	2,155	..	...	217
Florence *Crittenton Home*	Mat	*NPAssn*	*36*	36	21	*146*	154
Franklin County Home	Inst	County	125	115	..	...	115
Ohio Penitentiary Hospital	Inst	State	160	84	..	...	*2,000*
Dayton, 210,718—*Montgomery*							
Barney Convalescent Home *for Crippled Children*▲	Orth	*NPAssn*	*30*	*21*	..	...	103
Delaware, 8,944—Delaware							
Girls' Industrial School Hosp.	Inst	*State*	*32*	*12*	..	...	650
Euclid, 17,866—Cuyahoga							
Rose-Mary, The Johanna Grasselli Home for Crippled Children	Orth	*Church*	*22*	*21*	..	...	38
Granville, 1,502—Licking							
Denison University *Hospital*	Inst	*NPAssn*	*36*	*5*	..	...	557
Lancaster, 21,940—Fairfield							
Boys' Industrial School Hosp.	Inst	*State*	*100*	*16*	..	...	758
Orient, 175—Pickaway							
Orient State School	MeDe	*State*	*2,895*	*2,780*	..	...	*240*
Reynoldsburg, 652—Franklin							
Nightingale Cottage	TbChil	NPAssn	*40*	*23*	..	...	*53*
State Soldiers Home, 600—Erie							
Ohio Soldiers and Sailors Home Hospital	Inst	State	200	60	..	...	341
Toledo, 282,349—Lucas							
Lucas County Hospital Annex	Chr	County	112	No data supplied			
Toledo Society for Crippled Children Convalescent *Home*▲	Orth	NPAssn	80	35	..	...	172
Warren, 42,837—*Trumbull*							
	Alcoh	Indiv	6	2	..	...	*41*
—Cuyahoga							
	st	*City*	*170*	*161*	..	...	*190*
	&M	*Corp*	55	50	..	...	...
	&M	*Corp*	15	8	..	...	59
Wooster, 11,543—Wayne							
Hygeia Hall	Inst	NPAssn	25	7	..	...	136
Xenia, 10,633—Greene							
Ohio Soldiers' and Sailors' Orphans' Home Hospital	Inst	State	80	12	..	...	1,092

OKLAHOMA

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Ada,							
	Gen	NPAssn	25	8	2	47	581
Brec	Gen	NPAssn	70	41	13	416	2,091
Vall							
Altus, 8,593—Jackson							
Altus Hospital	Gen	Indiv	25	5	6	206	1,061
Alva, 5,055—Woods							
Alva General Hospital	Gen	City	28	21	10	227	1,495
Anadarko, 5,579—Caddo							
Anadarko Hospital	Gen	Part	22	11	6	100	615
Ardmore, 16,886—Carter							
Hardy Sanitarium▲	Gen	Indiv	*60*	31	18	452	1,565
Atoka, 2,548—Atoka							
Cotton Clinic Hospital	Gen	Indiv	12	7	4	125	357
Pine Mountain Medical Center	Ven	USPHS State	250	151	..	...	409

Key to symbols and abbreviations is on page 1091

OKLAHOMA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Bartlesville, 16,267—Washington							
Washington County Memorial Hospital	Gen	County	73	41	17	490	1,916
Beaver, 1,166—Beaver							
Beaver Hospital	Gen	City	20	10	6	150	583
Blackwell, 8,537—Kay							
Blackwell General Hospital	Gen	NPAssn	34	32	8	225	1,839
Carnegie, 1,740—Caddo							
Carnegie Hospital	Gen	Corp	14	8	5	156	717
Cherokee, 2,553—Alfalfa							
Masonic Hospital	Gen	NPAssn	50	20	7	94	900
Chickasha, 14,111—Grady							
Chickasha Hospital and Clinic	Gen	Part	54	32	10	220	1,581
Cottage Hospital	Gen	Indiv	10	10	3	42	337
General Hospital	Gen	NPAssn	20	15	8	435	1,687
Claremore, 4,134—Rogers							
Claremore General Hospital	Gen	Indiv	14	10	3	111	639
Claremore Indian Hospital▲	Gen	IA	80	61	18	139	1,546
Clinton, 6,736—Custer							
Clinton Indian Hospital	Gen	IA	27	10	5	29	535
U. S. Naval Air Station Dispensary	Gen	Navy	114	12	..	...	14
Western Oklahoma State Hospital▲○	Gen	State	125	68	20	360	2,051
Western Oklahoma Tuberculosis Sanatorium▲	TB	State	240	200	..	...	313
Concho, 290—Canadian							
Cheyenne and Arapaho Hospital▲	Gen	IA	46	17	8	56	530
Cordell, 2,776—Washita							
Florence Hospital	Gen	Indiv	30	10	6	200	343
Cushing, 7,703—Payne							
Masonic Hospital▲	Gen	NPAssn	30	23	6	210	1,162
Duncan, 9,207—Stephens							
Lindley Hospital	Gen	Indiv	25	18	4	232	1,300
Patterson Hospital	Gen	Part	27	21	5	194	1,085
Weedn Hospital	Gen	Indiv	60	15	12	100	900
Durant, 10,027—Bryan							
Durant Hospital	Gen	Corp	32	15	9	174	958
Evergreen Sanitarium	Gen	Indiv	21	7	6	76	364
Haynie Hospital and Clinic	Gen	Part	11	5	6	67	318
Elk City, 5,021—Beckham							
Community Hospital	Gen	NPAssn	85	24	9	148	1,843
Tisdal Hospital	Gen	Indiv	35	20	4	156	1,112
El Reno, 10,078—Canadian							
Catto Hospital	Gen	Indiv	22	5	6	18	187
El Reno Sanitarium	Gen	Part	35	28	8	370	1,205
Federal Reformatory Hosp.▲	Inst	USPHS	44	21	..	...	666
Enid, 28,081—Garfield							
Enid General Hospital▲○	Gen	NPAssn	90	73	12	169	2,450
St. Mary's Enid Springs Hospital▲○	Gen	Church	75	51	15	694	3,298
University Hospital Foundation○	Gen	NPAssn	65	54	15	287	2,275
Erick, 1,591—Beckham							
Stagner Clinic and Hospital	Gen	Indiv	12	4	3	63	332
Fort Sill, —Comanche							
Station Hospital▲	Gen	Army	537	271	10	139	9,238
Fort Supply, 414—Woodward							
Western Oklahoma Hospital	Ment	State	1,600	1,543	..	...	450
Frederick, 5,109—Tillman							
Frederick Clinic Hospital	Gen	Indiv	17	9	5	190	628
Spurgeon Arrington and Allen Hospital and Clinic	Gen	Part	15	6	4	240	449
Grandfield, 1,116—Tillman							
Grandfield Hospital	Gen	Indiv	14	3	3	64	187
Granite, 1,058—Greer							
Lewis Hospital	Gen	Indiv	20	8	5	82	482
Guthrie, 10,018—Logan							
Cimarron Valley Wesley Hosp.	Gen	NPAssn	34	20	8	246	1,048
Henryetta, 6,905—Okmulgee							
Henryetta Hospital	Gen	Indiv	25	13	6	105	809
John Taylor Hospital	Gen	Indiv	18	9	3	150	722
Hobart, 5,177—Kiowa							
General Hospital	Gen	Part	28	12	10	246	1,173
Holdenville, 6,632—Hughes							
Pryor-Johnston-Kernek Clinic and Hospital	Gen	Part	16	14	8	248	1,040
Hollis, 2,732—Harmon							
Hollis Hospital	Gen	Indiv	16	6	7	132	613
Hominy, 3,267—Osage							
Hominy Hospital	Gen	Indiv	18	No data supplied			
Hugo, 5,909—Choctaw							
Johnson Hospital	Gen	Indiv	12	4	6	103	334
Lawton, 18,055—Comanche							
Angus Hospital	Gen	Part	16	10	12	347	818
Kiowa Indian Hospital▲	Gen	IA	150	81	16	204	2,438
Southwestern Clinic Hospital	Gen	Part	41	31	18	292	1,310
McAlester, 12,401—Pittsburg							
Albert Pike Hospital	Gen	NPAssn	47	42	9	215	2,099
Central Oklahoma State Hospital Annex	MeDe	State	250	248	..	...	27
St. Mary's Hospital▲	Gen	Church	52	38	15	382	1,995
U. S. Naval Dispensary	Gen	Navy	70	3	..	...	947
Miami, 8,345—Ottawa							
Miami Baptist Hospital	Gen	Church	65	43	12	426	2,924
Muskogee, 32,332—Muskogee							
Muskogee General Hospital○	Gen	City	108	63	35	540	2,710
Oklahoma Baptist Hosp.▲○	Gen	Church	100	67	22	410	2,620
Veterans Admin. Hospital▲	Gen	Vet	418	295	..	...	4,020

OKLAHOMA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Norman, 11,429—Cleveland							
Central Oklahoma State Hospital▲	Ment	State	2,634	2,462	..	...	936
Ellison Infirmary▲	Inst	State	50	11	..	...	1,229
U. S. Naval Air Station Dispenary	Gen	Navy	37	22	..	...	37
U. S. Naval Hospital★▲	Gen	Navy	819	1,124	..	...	247
Okeene, 1,079—Blaine							
Okeene Clinic Hospital	Gen	Indiv	10	5	5	48	354
Okemah, 3,811—Okfuskee							
Clinic Hospital	Gen	Indiv	10	7	4	146	403
Oklahoma City, 204,424—Oklahoma							
Bone and Joint Hospital—McBride Clinic+▲	Orth	Corp	45	42	..	...	2,280
Capitol Hill General Hospital	Gen	Corp	50	33	12	757	2,162
Coyne Campbell Sanitarium	N&M	Corp	70	44	..	...	969
Great Western Hospital	Gen	Part	35	19	2	35	256
Moorman's Farm Sanatorium	TB	Indiv	22	21	..	...	42
Oklahoma City General Hospital▲○	Gen	Corp	106	104	12	335	4,381
Polyclinic Hospital	Gen	Indiv	95	65	16	527	2,745
St. Anthony Hospital★+▲○	Gen	Church	375	331	75	2,225	11,056
University Hospitals★+▲○	GenOr	State	407	330	18	524	6,068
Wesley Hospital★▲○	Gen	Part	150	135	33	1,118	6,062
Willie Clinics Hospital	N&M	Indiv	20	15	..	...	150
Okmulgee, 16,051—Okmulgee							
Ming-Vernon Hospital	*Gen*	*Part*	*12*	*11*	*5*	*31*	*511*
Okmulgee City Hospital	Gen	City	45	35	10	274	1,490
Pauls Valley, 5,104—Garvin							
Johnson-Shirley Hospital	Gen	Part	15	8	6	313	462
Pauls Valley State Hospital	Epil	State	250	129	..	...	269
Pawhuska, 5,443—Osage							
Osage County Infirmary	Gen	County	48	13	8	32	337
Pawhuska Municipal Hospital	Gen	City	40	15	8	140	1,040
Pawnee, 2,742—Pawnee							
Pawnee-Ponca Hospital▲	Gen	IA	42	21	8	66	895
Picher, 5,848—Ottawa							
Picher Hospital	Gen	Part	17	No data supplied			
Ponca City, 16,794—Kay							
Ponca City Hospital▲○	Gen	Church	75	52	12	516	2,360
Prague, 1,422—Lincoln							
Rollins Hospital	Gen	Indiv	10	4	4	115	348
Pryor, 2,501—Mayes							
Whitaker Hospital	Gen	Part	17	12	5	168	686
Sapulpa, 12,249—Creek							
Sapulpa City Hospital	Gen	City	21	10	5	182	870
Sayre, 3,037—Beckham							
Sayre Hospital	Gen	Indiv	14	10	6	151	558
Seminole, 11,547—Seminole							
Harbor Hospital	Gen	Corp	27	27	7	237	1,196
Sentinel, 1,088—Washita							
McMurry and Stowers Hosp.	Gen	Part	20	9	6	116	695
Shattuck, 1,275—Ellis							
Shattuck Hospital	Gen	Indiv	48	6	6	198	1,957
Shawnee, 22,053—Pottawatomie							
A. C H. Hospital▲	Gen	Part	25	23	6	214	1,049
Shawnee Indian Sanatorium▲	TB	IA	150	70	..	...	175
Shawnee Municipal Hospital▲	Gen	City	66	49	18	462	2,491
Stillwater, 10,097—Payne							
Agricultural and Mechanical College Infirmary	Inst	State	70	12	..	...	1,069
Stillwater Municipal Hosp.▲	Gen	City	40	28	20	312	1,169
Sulphur, 7,970—Murray							
Oklahoma State Veterans Hospital▲	GenTb	State	136	101	..	...	828
Taft, 772—Muskogee							
State Hospital for Negro Insane	Ment	State	750	766	..	...	247
Tahlequah, 3,027—Cherokee							
Wm. W. Hastings Hospital▲	Gen	IA	72	27	13	199	764
Talihina, 1,057—Le Flore							
Eastern Oklahoma State Tuberculosis Sanatorium	TB	State	370	194	..	...	327
Talihina Indian Hospital▲	GenTb	IA	240	91	20	135	1,146
Tonkawa, 3,197—Kay							
Tonkawa Hospital	Gen	Indiv	20	4	4	48	320
Tulsa, 142,157—Tulsa							
Hillcrest Memorial Hosp.★▲○	Gen	NPAssn	358	173	60	1,364	8,903
Mercy Hospital for Crippled Children+	*Orth*	*Indiv*	*50*	...	..	...	...
Moton Memorial Hospital	Gen	NPAssn	44	16	10	132	600
St. John's Hospital★▲○	Gen	Church	273	218	60	1,395	9,063
Vinita, 5,685—Craig							
Eastern Oklahoma Hospital	Ment	State	2,700	2,698	..	...	432
Vinita Hospital	Gen	Corp	15	10	7	179	755
Waurika, 2,458—Jefferson							
Waurika Hospital	Gen	Corp	24	9	4	71	458
Wewoka, 10,315—Seminole							
Wewoka Hospital	Gen	Part	25	12	4	76	450
Woodward, 5,406—Woodward							
Memorial Hospital	Gen	Corp	26	15	6	227	1,339

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Enid, 28,081—Garfield							
Northern Oklahoma Hospital	MeDe	State	1,200	1,250	..	...	115
Fort Reno (El Reno P. O.), 150—Canadian							
Station Hospital	Gen	Army	14	1	..	...	85
McAlester, 12,401—Pittsburg							
Oklahoma State Prison Hosp.	Inst	State	28	2	..	...	1,018
Oklahoma City, 204,424—Oklahoma							
Campbell Tuberculosis Sanat.	TB	Part	31	19	..	...	59
Deaconess Hospital	Mat	Church	22	9	25	156	272

Key to symbols and abbreviations is on page 1091

OKLAHOMA—Continued

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Tahlequah, 3,027—Cherokee							
Sequoyah Vocational School Hospital	Inst	IA	23	6	..	...	292
Tulsa, 142,157—Tulsa							
Tulsa Junior League Home for Convalescent Crippled Children	Orth	NPAssn	33	18	..	...	56
Watonga, 2,828—Blaine							
Watonga Hospital	Gen	Indiv	13	12	4	112	633
Wynnewood, 2,318—Garvin							
Wynnewood Hospital Clinic	Gen	Part	10	6	5	155	497

OREGON

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Albany, 5,654—Linn							
Albany General Hospital	Gen	NPAssn	52	18	16	197	880
Ashland, 4,744—Jackson							
Community Hospital	Gen	Part	27	15	13	150	1,000
Astoria, 10,389—Clatsop							
Columbia Hospital▲	Gen	Church	91	61	15	294	2,621
St. Mary's Hospital▲○	Gen	Church	85	55	15	287	2,214
U. S. Naval Hospital★▲	Gen	Navy	672	418	12	122	4,151
Baker, 9,342—Baker							
St. Elizabeth Hospital▲○	Gen	Church	91	53	13	224	3,465
Bend, 10,021—Deschutes							
St. Charles Hospital	Gen	Church	70	33	15	300	1,594
Burns, 2,566—Harney							
Valley View Hospital	Gen	Part	16	12	4	82	499
Chemawa, 700—Marion							
Chemawa Indian Hospital	Gen	IA	49	10	4	2	467
Coos Bay, 5,259—Coos							
McAuley Hospital	Gen	Church	50	30	10	196	1,872
Corvallis, 8,392—Benton							
Ball Clinic	Gen	Indiv	18	10	9	160	697
Corvallis General Hospital▲	Gen	NPAssn	39	24	12	242	1,201
Student Health Service, Oregon State College	Inst	State	30	4	..	...	421
U. S. Naval Hospital★▲	Gen	Navy	1,994	...	..	Estab.	1945
Dallas, 3,579—Polk							
Dallas Hospital	Gen	Corp	26	19	6	141	603
Enterprise, 1,709—Wallowa							
Enterprise Hospital	Gen	NPAssn	16	8	6	100	440
Eugene, 20,838—Lane							
Eugene Hospital and Clinic▲	Gen	Part	56	50	3	7	2,089
Sacred Heart General Hosp.▲○	Gen	Church	168	124	38	1,160	7,105
Grants Pass, 6,028—Josephine							
Josephine General Hospital	Gen	County	62	45	12	278	1,643
Hillsboro, 3,747—Washington							
Jones Hospital	Gen	Indiv	32	20	10	262	1,516
Hood River, 3,280—Hood River							
Hood River Hospital	Gen	NPAssn	40	25	9	234	1,836
Klamath Agency, 150—Klamath							
Klamath Indian Hospital	Gen	IA	27	8	6	34	359
[illegible]							
[illegible]▲	Gen	Corp	50	43	10	275	2,205
[illegible]	Gen	Indiv	80	45	26	600	1,800
La Grande, 7,747—Union							
St. Joseph Hospital▲⊙	Gen	Church	53	28	12	195	1,326
Lakeview, 2,466—Lake							
Lakeview Hospital	Gen	Corp	22	10	6	90	721
Lebanon, 2,729—Linn							
Lebanon General Hospital	Gen	Part	30	25	7	418	1,420
[illegible]hill							
[illegible]	Gen	Corp	28	15	8	73	574
[illegible]	Gen	Corp	43	40	13	368	2,009
Medford, 11,281—Jackson							
Community Hospital▲	Gen	NPAssn	48	28	12	250	1,542
Sacred Heart Hospital▲	Gen	Church	75	40	10	225	1,939
Milwaukie, 1,871—Clackamas							
Portland Open Air Sanat.	TB	NPAssn	53	41	..	...	189
Myrtle Point, 1,296—Coos							
Mast Hospital	Gen	Indiv	40	18	6	139	946
Newberg, 2,960—Yamhill							
Willamette Hospital	Gen	NPAssn	21	14	8	127	820
North Bend, 4,262—Coos							
Keizer Brothers Hospital	Gen	Corp	60	45	10	257	1,795
Ontario, 3,551—Malheur							
Holy Rosary Hospital▲	Gen	Church	50	25	12	250	1,380
Oregon City, 6,124—Clackamas							
Hutchinson General Hospital	Gen	Part	30	17	10	114	497
Oregon City Hospital▲	Gen	Corp	64	51	12	397	1,802
Pendleton, 8,847—Umatilla							
Eastern Oregon State Hosp.▲	Ment	State	1,350	1,261	..	...	198
St. Anthony's Hospital▲○	Gen	Church	100	80	20	250	2,800
Portland, 305,394—Multnomah							
Coffey Memorial Hospital▲	Gen	NPAssn	115	105	..	...	4,978
Doernbecher Memorial Hospital for Children⊙	Unit of University of Oregon Medical School Hospitals and Clinics						
Emanuel Hospital★+▲○	Gen	Church	330	343	95	3,250	11,563
Good Samaritan Hosp.★+▲○	Gen	Church	430	353	75	1,706	13,595
Hahnemann Hospital▲	Gen	NPAssn	75	57	14	247	1,848
Juvenile Hospital for Girls	Ven	NPAssn	50	43	2	2	136
Morningside Hospital	Ment	Fed	340	324	..	...	55
Multnomah Hospital	Unit of University of Oregon Medical School Hospitals and Clinics						
Portland Convalescent Hosp.	Med	Indiv	25	12	..	...	172
Portland Sanitarium and Hospital★▲○	Gen	Church	148	144	54	1,862	6,203
Providence Hospital★▲○	Gen	Church	210	155	..	...	6,118
St. Vincent's Hospital★+▲○	Gen	Church	358	315	72	1,823	15,765
Salvation Army White Shield Home	Mat	Church	35	23	35	80	100
Shriners Hospital for Crippled Children+▲⊙	Orth	NPAssn	60	39	..	...	365
Theo. B. Wilcox Memorial Hospital	Unit of Good Samaritan Hospital						
University of Oregon Medical School Hospitals and Clinics★+▲○	GenTb	CoState	418	356	35	258	6,400
University State Tuberculosis Hospital⊙	Unit of University of Oregon Medical School Hospitals and Clinics						
Vanport City Hospital	Gen	NPAssn	136	81	30	602	4,658
Veterans Admin. Hospital▲	Gen	Vet	526	371	..	...	3,608
Prairie City, 647—Grant							
Blue Mt. General Hospital	Gen	City	16	...	6	Reorganized	
Prineville, 2,358—Crook							
Prineville General Hospital	Gen	Indiv	25	14	6	142	690
Roseburg, 4,924—Douglas							
Mercy Hospital	Gen	Church	45	29	10	254	1,920
Veterans Admin. Hospital▲	Ment	Vet	650	557	..	...	438
St. Helens, 4,304—Columbia							
St. Helen's Hospital	Gen	Corp	20	4	6	48	164
Salem, 30,908—Marion							
Oregon State Hospital+▲⊙	Ment	State	2,800	2,068	..	...	1,378
Oregon State Tuberculosis Hospital▲	TB	State	180	161	..	...	135
Salem Deaconess Hospital	Gen	Church	104	80	18	626	3,600
Salem General Hospital▲	Gen	NPAssn	78	67	18	569	3,686
Silverton, 2,925—Marion							
Silverton General Hospital	Gen	NPAssn	20	20	9	302	858
The Dalles, 6,266—Wasco							
Eastern Oregon State Tuberculosis Hospital	TB	State	135	111	..	...	110
Mid-Columbia Hospital	Gen	Indiv	22	16	6	59	699
The Dalles Hospital▲○	Gen	Corp	75	48	20	300	2,176
Tillamook, 2,751—Tillamook							
Tillamook General Hospital	Gen	County	40	21	12	223	1,284
Toledo, 2,288—Lincoln							
Lincoln Hospital	Gen	Corp	25	17	5	99	590
Troutdale, 211—Multnomah							
Multnomah County Tuberculosis Pavilion	TB	County	37	34	..	...	74
Warm Springs, 150—Jefferson							
Warm Springs Hospital	Gen	IA	21	7	6	23	252

Related Institutions

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Portland, 305,394—Multnomah							
City Isolation Hospital	Iso	City	115	15	..	...	651
Shadel Sanitarium	Drug	Corp	17	12	..	...	241
Salem, 30,908—Marion							
Oregon Fairview Home	MeDe	State	1,114	1,049	..	...	91
Oregon State Penitentiary Hospital	Inst	State	60	29	..	...	310
Oregon State School for the Deaf	Inst	State	20	2	..	...	696
Waldport, 630—Lincoln							
Waldport Community Hosp.	Gen	Indiv	10	1	4	20	46

PENNSYLVANIA

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Abington, 3,200—Montgomery							
Abington Memorial Hosp.★+▲○	Gen	NPAssn	281	205	59	1,167	7,354
Allentown, 96,904—Lehigh							
Allentown Hospital★+▲○	Gen	NPAssn	342	310	33	1,171	8,867
Allentown State Hospital▲⊙	Ment	State	1,909	1,950	..	...	428
Baer Hospital	Gen	Indiv	10	6	10	96	162
Sacred Heart Hospital★+▲○	GenTb	Church	291	263	41	1,198	6,545
Allenwood, 400—Union							
Devitt's Camp	TB	NPAssn	104	97	..	...	200
Altoona, 80,214—Blair							
Altoona Hospital★▲○	Gen	NPAssn	177	149	28	1,016	4,961
Mercy Hospital★▲○	Gen	NPAssn	136	117	44	827	4,283
Ambler, 3,953—Montgomery							
Dufur Hospital	N&M	NPAssn	80	65	..	...	125
Ashland, 7,045—Schuylkill							
Ashland State Hospital○▲	Gen	State	173	122	20	282	2,783
Beaver Falls, 17,098—Beaver							
Providence Hospital▲○	Gen	NPAssn	63	61	16	475	2,500
Bedford, 3,268—Bedford							
Timmins' Hospital	Gen	Indiv	17	9	4	70	534
Bellefonte, 5,304—Centre							
Centre County Hospital	Gen	NPAssn	56	53	19	574	1,723
Bellevue (Pittsburgh P.O.), 10,488—Allegheny							
Suburban General Hospital▲○	Gen	NPAssn	105	72	25	508	2,746
Berwick, 13,181—Columbia							
Berwick Hospital	Gen	NPAssn	63	30	12	311	1,291
Bethlehem, 58,490—Northampton							
St. Luke's Hospital★+▲○	Gen	NPAssn	256	208	37	821	7,192
Bloomsburg, 9,799—Columbia							
Bloomsburg Hospital▲○	Gen	NPAssn	117	84	18	518	2,072
Blossburg, 1,955—Tioga							
Blossburg State Hospital▲	Gen	State	90	72	9	144	1,513
Braddock, 18,326—Allegheny							
Braddock General Hosp.★○	Gen	NPAssn	175	116	42	1,174	4,311
Bradford, 17,691—McKean							
Bradford Hospital▲○	Gen	NPAssn	118	92	23	510	3,241

PENNSYLVANIA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census†	Bassinets	Number of Births	Admissions†
Brookville, 4,397—Jefferson							
Brookville Hospital▲	Gen	NPAssn	36	33	10	265	1,397
Brownsville, 8,015—Fayette							
Brownsville General Hosp.▲◇	Gen	NPAssn	89	75	10	507	2,339
Bryn Mawr, 10,206—Montgomery							
Bryn Mawr Hospital★+▲◇	Gen	NPAssn	285	208	48	1,162	6,353
Butler, 24,477—Butler							
Butler County Memorial Hospital▲◇	Gen	NPAssn	159	125	35	911	4,597
Canonsburg, 12,599—Washington							
Canonsburg General Hosp.▲◇	Gen	NPAssn	84	61	32	608	2,235
Carbondale, 19,371—Lackawanna							
Carbondale General Hospital▲	Gen	NPAssn	69	50	18	278	1,735
St. Joseph's Hospital▲◇	Gen	Church	106	63	12	298	1,831
Carlisle, 13,984—Cumberland							
Carlisle Hospital▲	Gen	NPAssn	78	96	17	574	3,515
Station Hospital	Gen	Army	60	53	2	26	792
Chambersburg, 14,852—Franklin							
Chambersburg Hospital▲	Gen	NPAssn	94	65	18	488	2,885
Charleroi, 10,784—Washington							
Charleroi-Monessen Hospital▲	Gen	NPAssn	136	140	33	843	4,263
Chester, 59,285—Delaware							
Chester Hospital★▲◇	Gen	NPAssn	235	182	45	1,348	7,071
J. Lewis Crozer Home for Incurables and Homeopathic Hospital	GenIncur	NPAssn	85	65	20	669	3,078
Clarks Summit, 2,691—Lackawanna							
Clarks Summit State Hosp.	Ment	State	1,087	1,039	..	...	216
Clearfield, 9,372—Clearfield							
Clearfield Hospital▲◇	Gen	NPAssn	107	72	18	458	2,668
Coaldale, 6,163—Schuylkill							
Coaldale State Hospital▲	Gen	State	120	108	18	382	2,597
Coatesville, 14,006—Chester							
Clement Atkinson Memorial Hospital	Gen	Indiv	17	7	3	52	218
Coatesville Hospital▲◇	Gen	NPAssn	95	63	24	501	2,399
Veterans Admin. Hospital▲	Ment	Vet	1,871	1,746	..	...	504
Columbia, 11,547—Lancaster							
Columbia Hospital	Gen	NPAssn	45	20	10	265	997
Confluence, 1,035—Somerset							
Price Hospital	Gen	Indiv	13	6	4	41	281
Connellsville, 13,608—Fayette							
Connellsville State Hospital▲	Gen	State	97	70	19	627	4,406
Corry, 6,935—Erie							
Corry Hospital	Gen	NPAssn	40	30	8	286	1,559
Coudersport, 3,197—Potter							
Potter County Memorial Hospital	Gen	NPAssn	43	20	5	134	986
Cresson, 2,500—Cambria							
Pennsylvania State Tuberculosis Sanatorium No. 2	TB	State	778	693	..	...	524
Danville, 7,122—Montour							
Danville State Hospital+▲◇	Ment	State	2,571	2,394	..	...	393
Geo. F. Geisinger Memorial Hospital★+▲◇	Gen	NPAssn	188	137	36	616	6,122
Darby, 10,334—Delaware							
Fitzgerald-Mercy Hosp.★▲◇	Gen	Church	197	153	63	1,605	5,224
Dixmont, 188—Allegheny							
Dixmont State Hospital	Ment	State	1,000	969	..	...	50
Doylestown, 4,976—Bucks							
Dr. Buckman's Sanitarium	N&M	Indiv	25	18	..	...	50
Drexel Hill, —Delaware							
Delaware County Hospital▲	Gen	NPAssn	74	55	16	532	2,563
Du Bois, 12,080—Clearfield							
Du Bois Hospital	Gen	Church	55	36	12	264	1,727
Maple Avenue Hospital	Gen	NPAssn	71	47	15	259	1,938
[illegible]							
[illegible]▲	TB	NPAssn	188	181	...	...	169
Easton, 33,589—Northampton							
Betts Hospital	Gen	NPAssn	54	40	24	394	1,595
Easton Hospital★▲◇	Gen	NPAssn	186	150	24	625	4,368
Easton Sanitarium	N&M	Indiv	30	No data supplied			
East Stroudsburg, 6,404—Monroe							
General Hospital of Monroe County▲	Gen	NPAssn	61	45	15	288	1,345
Elizabethtown, 4,315—Lancaster							
Philadelphia Freemasons' Memorial Hospital Masonic Homes	Inst	NPAssn	165	142	..	...	532
State Hospital for Crippled Children+▲	Orth	State	225	112	..	...	107
Ellwood City, 12,329—Lawrence							
Ellwood City Hospital▲	Gen	NPAssn	89	52	31	460	1,784
Elwyn, 200—Delaware							
Elwyn Training School	McDe	NPAssn	1,130	1,088	..	...	101
Erie, 116,995—Erie							
Erie County Tuberculosis Hospital	TB	County	65	62	..	...	125
Hamot Hospital★+▲◇	Gen	NPAssn	224	205	31	1,102	7,138
St. Vincent's Hospital★▲◇	Gen	NPAssn	267	223	73	2,075	9,026
Zem Zem Hospital for Crippled Children	Orth	NPAssn	50	38	..	...	67
Everett, 24,425—Bedford							
Everett Hospital	Gen	County	40	21	8	120	792
Franklin, 9,948—Venango							
Franklin Hospital	Gen	NPAssn	95	56	21	377	2,307
Gettysburg, 5,916—Adams							
Annie M. Warner Hospital▲	Gen	NPAssn	58	35	15	446	2,172
Gladwyne, 1,226—Montgomery							
Gladwyne Colony	N&M	Indiv	85	80	..	...	130
Greensburg, 16,743—Westmoreland							
Westmoreland Hospital▲◇	Gen	NPAssn	190	156	40	1,255	5,839
Greenville, 8,149—Mercer							
Greenville Hospital	Gen	NPAssn	62	21	14	320	1,233
Grove City, 6,296—Mercer							
Grove City Hospital	Gen	NPAssn	31	25	10	205	681
Hamburg, 3,717—Berks							
Pennsylvania State Sanatorium for Tuberculosis▲	TB	State	776	495	..	...	480
Hanover, 13,076—York							
Hanover General Hospital▲	Gen	NPAssn	80	60	18	700	2,354
Harrisburg, 83,893—Dauphin							
Harrisburg Hospital★▲◇	Gen	NPAssn	312	268	56	1,507	8,078
Harrisburg Polyclinic Hospital★▲◇	Gen	NPAssn	160	134	40	1,190	5,310
Harrisburg State Hospital+▲	Ment	State	2,450	2,448	..	...	412
Keystone Hospital	Gen	Indiv	32	27	8	241	868
Hazleton, 38,009—Luzerne							
Hazleton State Hospital▲◇	Gen	State	180	156	30	570	5,153
Hollidaysburg, 5,910—Blair							
Hollidaysburg State Hospital	Ment	State	356	355	..	...	94
Homstead, 19,041—Allegheny							
Homestead Hospital▲◇	Gen	NPAssn	122	111	28	621	3,654
Honesdale, 5,687—Wayne							
Wayne County Memorial Hospital	Gen	NPAssn	36	21	8	188	820
Huntingdon, 7,170—Huntingdon							
J. C. Blair Memorial Hosp.▲	Gen	NPAssn	70	56	14	385	2,191
Indiana, 10,050—Indiana							
Indiana Hospital▲◇	Gen	NPAssn	170	136	20	665	5,102
Jersey Shore, 5,432—Lycoming							
Community Hospital	Gen	NPAssn	32	19	10	193	833
Johnstown, 66,668—Cambria							
Conemaugh Valley Memorial Hospital★▲◇	Gen	NPAssn	337	250	73	1,097	7,154
Lee Homeopathic Hospital	Gen	NPAssn	62	63	23	469	2,346
Mercy Hospital▲◇	Gen	Church	111	96	24	731	3,121
Kane, 6,133—McKean							
Community Hospital▲	Gen	NPAssn	59	24	12	146	885
Kane Summit Hospital	Gen	NPAssn	23	18	6	101	719
Kingston, 20,679—Luzerne							
Nesbitt Memorial Hosp.★▲◇	Gen	NPAssn	130	130	30	945	4,175
Kittanning, 7,550—Armstrong							
Armstrong County Hospital	Gen	NPAssn	73	53	20	574	1,955
Lancaster, 61,345—Lancaster							
Lancaster General Hosp.★▲◇	Gen	NPAssn	241	217	60	1,419	6,580
Rossmere Sanatorium	TB	CyCo	55	48	..	...	80
St. Joseph's Hospital★▲◇	Gen	Church	220	169	40	663	5,319
Lansdale, 9,316—Montgomery							
Elm Terrace Hospital	Gen	NPAssn	37	20	12	210	972
Latrobe, 11,111—Westmoreland							
Latrobe Hospital▲◇	Gen	NPAssn	130	84	30	680	3,234
Laurelton, 327—Union							
Laurelton State Village	McDe	State	907	910	..	...	53
Lebanon, 27,206—Lebanon							
Good Samaritan Hospital▲◇	Gen	NPAssn	120	71	32	732	2,761
Lebanon Sanatorium	Gen	NPAssn	40	33	9	311	1,014
Leetsdale, 2,332—Allegheny							
D. T. Watson Home for Crippled Children▲	Orth	NPAssn	100	88	..	...	190
Lewisburg, 3,571—Union							
Evangelical Hospital	Gen	Church	39	33	25	366	1,117
U. S. Penitentiary Hospital▲	Inst	USPHS	64	39	..	...	1,053
Lewistown, 13,017—Mifflin							
Lewistown Hospital▲◇	Gen	NPAssn	92	94	21	591	3,015
Ligonier, 2,111—Westmoreland							
Mercy Hospital	Gen	Church	11	...	5	Estab. 1945	
Limeport, 250—Lehigh							
Sacred Heart Sanatorium	Unit of Sacred Heart Hospital, Allentown						
Lock Haven, 10,810—Clinton							
Lock Haven Hospital▲◇	Gen	NPAssn	71	54	20	331	2,093
Teah Private Hospital	Gen	Indiv	30	10	6	101	779
Mayview, 420—Allegheny							
Mayview State Hospital	Ment	State	3,173	3,016	..	...	510
Pittsburg City Homes and Hospitals+▲	GenInst	County	832	730	..	...	33
McKeesport, 55,355—Allegheny							
McKeesport Hospital★▲◇	Gen	NPAssn	275	217	50	1,738	6,950
McKees Rocks, 17,021—Allegheny							
Ohio Valley General Hosp.▲◇	Gen	NPAssn	59	45	24	420	2,021
Meadville, 18,919—Crawford							
Meadville City Hospital▲◇	Gen	NPAssn	110	94	26	481	3,582
Spencer Hospital▲◇	Gen	NPAssn	100	85	29	515	3,337
Media, 5,351—Delaware							
Media Hospital	Gen	Indiv	21	No data supplied			
Mercer, 2,272—Mercer							
Mercer Cottage Hospital	Gen	Corp	50	29	5	143	1,418
Mercer Sanitarium	N&M	Part	43	37	..	...	119
Meyersdale, 3,250—Somerset							
Hazel McGilvery Hospital	Gen	NPAssn	14	8	8	147	507
Monaca, 7,061—Beaver							
Beaver County Sanatorium▲	TB	County	62	59	..	...	70
Monessen, 20,257—Westmoreland							
Gemmill Hospital	ENT	Part	15	8	..	...	793
Monongahela, 8,825—Washington							
Memorial Hospital▲	Gen	NPAssn	76	58	23	425	1,977
Mount Pleasant, 5,824—Westmoreland							
Henry Clay Frick Memorial Hospital▲◇	Gen	NPAssn	71	59	27	629	2,374
Muncy, 2,696—Lycoming							
Muncy Valley Hospital	Gen	NPAssn	20	15	6	146	471
Nanticoke, 24,387—Luzerne							
Nanticoke State Hospital▲	Gen	State	100	90	15	434	2,617

Key to symbols and abbreviations is on page 1091

PENNSYLVANIA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
New Brighton, 9,630—Beaver							
Beaver Valley General Hosp ▲○	Gen	NPAssn	80	64	18	407	2,473
New Castle, 47,638—Lawrence							
Jameson Memorial Hosp ▲○	Gen	NPAssn	145	120	37	827	4,919
New Castle Hospital▲○	Gen	Church	115	105	29	596	3,650
New Kensington, 24,055—Westmoreland							
Citizens General Hospital▲○	Gen	NPAssn	148	132	38	1,140	4,239
New Wilmington, 1,018—Lawrence							
Overlook Sanitarium	Conv	Part	35	28			185
Norristown, 38,181—Montgomery							
Montgomery Hospital★▲○	Gen	NPAssn	134	112	30	[illegible]	3,926
Norristown State Hospital+▲○	Ment	State	4,401	4,389			682
Sacred Heart Hospital▲	Gen	Church	66	51	20	466	2,088
Oakbourne (West Chester P O), 100—Chester							
Pennsylvania Epileptic Hospital and Colony Farm	Epil	NPAssn	140	88			15
Oil City, 20,379—Venango							
Oil City Hospital▲○	Gen	NPAssn	120	92	20	545	3,182
Palmerton, 7,475—Carbon							
Palmerton Hospital▲○	Gen	NPAssn	65	61	11	299	2,261
Peckville, 8,106—Lackawanna							
Mid Valley Hospital	Gen	NPAssn	65	43	14	398	1,535
Philadelphia, 1,931,334—Philadelphia							
American Hospital for Diseases of the Stomach▲	Gen	NPAssn	44	18	6	107	1,001
American Oncologic Hosp +▲	SkCa	NPAssn	51	30			581
Anderson Hospital	Gen	NPAssn	90	37	24	340	4,611
Babies' Hospital+	Chil	NPAssn	14	8			257
Broad Street Hospital▲	Gen	NPAssn	80	48	30	449	1,663
Chestnut Hill Hospital★▲○	Gen	NPAssn	106	76	36	619	2,863
Children's Heart Hospital▲	Card	NPAssn	60	60			96
Children's Hospital+▲○	Chil	NPAssn	142	100			2,330
Children's Hospital of the Mary J Drexel Home+▲	Chil	Church	45	21			1,076
Columbus Hospital	Gen	Church	52	34	18	402	2,119
Community Hospital	Gen	NPAssn	40	20	12	57	291
Crothers Dulles Hospital	Unit of Hospital of Univ of Pennsylvania						
Doctors Hospital	Gen	NPAssn	163	107	47	677	3,903
Eastern State Penitentiary Hospital	Inst	State	60	15			820
Fairmount Farm	N&M	Corp	60	60			719
Frankford Hospital★▲○	Gen	NPAssn	144	113	48	1,336	3,799
Frederick Douglass Memorial Hospital▲	Gen	NPAssn	87	60	14	383	1,734
Friends Hospital+▲○	N&M	NPAssn	170	139			238
Garretson Hospital	Unit of Temple University Hospital						
Germantown Dispensary and Hospital★+▲○	Gen	NPAssn	345	245	65	1,605	6,357
Graduate Hospital of the Univ of Pennsylvania★+▲	Gen	NPAssn	461	210			5,220
Hahnemann Hospital★+▲○	Gen	NPAssn	558	393	97	1,880	10,412
Hall Mercer Hospital	Associated with Institute of the Pennsylvania Hospital, Philadelphia						
Home for Consumptives	TB	Church	101	67			359
Hospital of the Protestant Episcopal Church★+▲○	Gen	Church	488	393	64	1,807	7,860
Hospital of the University of Pennsylvania★+▲○	Gen	NPAssn	666	541	63	1,357	15,021
Hospital of the Woman's Medical College of Pennsylvania★+▲○	Gen	NPAssn	164	135	38	928	4,680
Institute of the Pennsylvania Hospital+▲	N&M	NPAssn	50	41			764
Jeanes Hospital+▲	Cancer	NPAssn	68	41			572
Jefferson Medical College Hospital★+▲○	Gen	NPAssn	694	649	53	1,465	16,715
Jewish Hospital★+▲○	Gen	NPAssn	385	329	69	1,502	8,291
Joseph Price Memorial Hosp ▲	Gen	NPAssn	62	37	13	76	669
Lankenau Hospital★+▲○	Gen	NPAssn	260	193	34	774	5,919
Lying In Hospital	Unit of Pennsylvania Hospital						
Memorial Hospital★▲○	Gen	NPAssn	99	72	19	561	2,631
Mercy Hospital★▲○	Gen	NPAssn	104	89	16	393	1,741
Methodist Hospital★▲○	Gen	Church	199	153	47	878	4,833
Misericordia Hospital★▲○	Gen	Church	192	168	38	1,291	5,556
Mount Sinai Hospital★+▲○	Gen	NPAssn	262	220	55	1,074	6,619
Nazareth Hospital★▲	Gen	Church	150	109	35	889	4,114
Northeastern Hospital★▲○	Gen	NPAssn	87	66	15	605	2,386
▲	Gen	NPAssn	58	45	11	155	1,655
	Unit of Temple University Hospital						
▲	Gen	NPAssn	454	306	105	2,450	9,092
Pennsylvania Hospital, Department for Mental and Nervous Diseases+▲○	N&M	NPAssn	200	181			337
Philadelphia General Hospital★+▲○	Gen	City	2,500	1,703	60	1,570	22,778
Philadelphia Hospital for Contagious Diseases+▲○	IsoTb	City	1,072	260			3,481
Philadelphia Psychiatric Hospital▲	N&M	NPAssn	60	47			430
Philadelphia State Hosp +▲○	Ment	State	6,355	6,171			963
Physicians and Surgeons Hospital	Gen	NPAssn	45	20	7	[illegible]	[illegible]
Presbyterian Hospital★+▲○	Gen	Church	367	299	42	[illegible]	6,110
Preston Retreat▲	Mat	NPAssn	50	8	35	210	242
Rush Hospital for Consumption and Allied Diseases▲	TB	NPAssn	106	106			265
St Agnes Hospital▲○	Gen	Church	546	191	110	2,112	7,566
St Christopher's Hospital for Children+▲○	Chil	NPAssn	85	[illegible]			2,119
St Joseph's Hospital★▲○	Gen	Church	193	143	25	587	[illegible]
St Luke's and Children's Medical Center★+▲○	Gen	NPAssn	257	150	58	937	[illegible]
St Mary's Hospital★▲○	Gen	Church	250	171	50	969	4,741
St Vincent's Hospital for Women and Children▲	Gen	Church	116	62	24	609	943
Shriners Hospital for Crippled Children+▲	Orth	NPAssn	120	42			[illegible]
Skin and Cancer Hospital+	SkCa	NPAssn	33	27			163
Stetson Hospital▲	Gen	NPAssn	64	37	15	223	1,344
Temple University Hosp ★+▲○	Gen	NPAssn	456	412	44	1,596	11,175
U S Naval Hospital★+▲	Gen	Navy	[illegible]	2,813			24,433
Urologic Clinic	Urol	Part	15	7			[illegible]
Wills Hospital+▲	Eye	NPAssn	200	140			[illegible]
Wolffe Clinic and Hosp	MedCard	Part	30	18			570
Woman's Hospital★+▲○	Gen	NPAssn	137	100	46	1,284	3,443
Women's Homoeopathic Hospital★▲○	Gen	NPAssn	170	102	40	601	[illegible]
Philipsburg, 3,963—Centre							
Benson Sanatorium	Gen	Indiv	19	14	11	124	515
Philipsburg State Hospital▲○	Gen	State	132	101	18	412	[illegible]
Phoenixville, 12,282—Chester							
Phoenixville Hospital▲	Gen	NPAssn	76	36	16	381	1,646
Pittsburgh, 671,659—Allegheny							
Allegheny General Hosp ★▲+○	Gen	NPAssn	554	444	54	[illegible]	[illegible]
Belvedere General Hospital	Gen	NPAssn	40	21	10	97	790
Children's Hospital+▲○	Chil	NPAssn	194	142			4,302
City Tuberculosis Hospital▲	TB	City	455	304			311
Elizabeth Steel Magee Hospital+▲○	Gen	NPAssn	309	270	121	3,745	7,342
Eye, Ear, Nose and Throat Hospital+▲○	ENT	NPAssn	106	85	6		4,999
Fairview Sanatorium	N&M	Corp	12	12			15
Haddon Hospital	Gen	NPAssn	21	13	15	364	709
Mercy Hospital★+▲○	Gen	Church	639	594	48	1,474	[illegible]
Montefiore Hospital★+▲○	Gen	NPAssn	225	193	32	672	[illegible]
Municipal Hospital▲○	Iso	City	225	55			[illegible]
Passavant Hospital▲○	Gen	Church	102	65	20	234	1,957
Pittsburgh Hospital★▲○	Gen	NPAssn	186	179	24	914	4,408
Presbyterian Hospital★+▲○	Gen	NPAssn	235	179			[illegible]
Roselia Foundling and Maternity Hospital▲	MatCh	NPAssn	126	108	28	377	408
St Francis Hospital★+▲○	Gen	NPAssn	648	[illegible]	50	1,306	11,392
St John's General Hosp ★▲○	Gen	NPAssn	197	166	53	1,403	[illegible]
St Joseph's Hospital and Dispensary★▲○	Gen	Church	170	148	30	927	4,215
St Margaret Memorial Hospital★▲○	Gen	Church	129	77	21	424	2,510
Shadyside Hospital★▲○	Gen	NPAssn	293	255	40	1,093	7,909
South Side Hospital★▲○	Gen	NPAssn	207	140	18	560	4,847
Tuberculosis League Hosp ▲○	TB	NPAssn	150	150			184
U S Marine Hospital▲	Gen	USPHS	73	54			1,333
Veterans Admin Hospital▲	Gen	Vet	1,134	764			9,886
Western Pennsylvania Hospital★+▲○	Gen	NPAssn	576	380	61	1,293	10,237
Western State Penitentiary Hospital	Inst	State	37	34	.	.	477
Western State Psychiatric Institute and Clinic+▲○	Ment	State	176	171	.	. .	115
Woman's Hospital▲	Gen	NPAssn	115	90	.		4,000
Pittston, 17,828—Luzerne							
Pittston Hospital▲○	Gen	NPAssn	123	78	17	577	3,296
	MeDe	State	3,455	3,178			150
	Inst	NPAssn	40	8			500
Homeopathic Hospital	Gen	NPAssn	47	23	16	253	1,056
Pottstown Hospital▲○	Gen	NPAssn	94	59	24	486	2,358
P							
▲	Gen	Indiv	75	No data supplied			
▲	Gen	NPAssn	72	52	27	657	[illegible]
▲	Gen	NPAssn	155	106	17	390	[illegible]
Punxsutawney, [illegible]							
Adrian Hospital▲	Gen	NPAssn	79	78	11	432	2,141
Quakertown, 5,150—Bucks							
Quakertown Community Hospital▲	Gen	NPAssn	58	35	19	294	1,200
Ransom, 150—Lackawanna							
Ransom Mental Hospital	Ment	County	[illegible]	[illegible]	.	.	44
Reading, 110,568—Berks							
Berks County Tuberculosis Sanatorium▲	TB	County	143	92			[illegible]
Community General Hosp ★▲	Gen	NPAssn	[illegible]	72	21	409	[illegible]
Reading Hospital★+▲○	Gen	NPAssn	[illegible]	200	57	1,757	[illegible]
St Joseph Hospital★▲○	Gen	Church	189	[illegible]	[illegible]	[illegible]	5,176
Renovo, 3,784—Clinton							
Renovo Hospital	Gen	NPAssn	24	12	6	144	677
Retreat, 2,000—Luzerne							
Retreat State Hospital▲	Ment	State	1,175	1,109	.		170
Ridgway, 6,253—Elk							
Elk County General Hospital	Gen	NPAssn	69	[illegible]	11	175	[illegible]
Ridley Park, [illegible]—Delaware							
Taylor Hospital	Gen	NPAssn	70	[illegible]	18	[illegible]	[illegible]
Roaring Spring, 2,724—Blair							
Nason Hospital	Gen	NPAssn	[illegible]	[illegible]	12	227	[illegible]
Rochester, 7,441—Beaver							
Rochester General Hospital▲○	Gen	NPAssn	110	[illegible]	23	[illegible]	[illegible]
Royersford, [illegible]—Montgomery							
Montgomery County Institution District Home	ChrInst	County	92	75	..	- .	123
St Marys, [illegible]—Elk							
Andrew Kaul Memorial Hosp	Gen	Church	65	52	15	[illegible]	[illegible]

Key to symbols and abbreviations is on page 1091

PENNSYLVANIA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Sayre, 7,569—Bradford							
Robert Packer Hospital★+▲○	Gen	NPAssn	304	234	21	647	8,069
Scranton, 140,404—Lackawanna							
Hahnemann Hospital▲○	Gen	NPAssn	125	108	16	895	3,148
Lackawanna County Tuberculosis Hospital▲	TB	County	165	144	..	...	94
Mercy Hospital▲○	Gen	Church	88	83	22	547	2,795
Moses Taylor Hospital★▲○...	Gen	NPAssn	120	87	..	...	1,498
St. Joseph's Children's and Maternity Hospital▲⊙	MatChil	Church	185	163	4	60	291
St. Mary's Mater Misericordiae Hospital▲○	Gen	Church	72	51	12	245	1,526
Scranton State Hospital★▲○..	Gen	State	290	211	20	546	5,163
West Side Hospital▲○........	Gen	NPAssn	65	55	10	253	1,517
Sellersville, 2,115—Bucks							
Grand View Hospital▲○......	Gen	NPAssn	74	53	25	546	2,005
Sewickley, 5,614—Allegheny							
Sewickley Valley Hospital★▲○	Gen	NPAssn	151	159	34	1,178	5,513
Shamokin, 18,810—Northumberland							
Shamokin State Hospital▲...	Gen	State	89	67	26	579	2,227
Sharon, 25,622—Mercer							
Christian H. Buhl Hospital▲○	Gen	NPAssn	233	174	44	1,226	7,242
Shenandoah, 19,790—Schuylkill							
Locust Mountain State Hosp.▲	Gen	State	77	75	18	479	3,017
Somerset, 5,430—Somerset							
Somerset Community Hosp..	Gen	NPAssn	66	53	14	319	2,134
South Mountain, 200—Franklin							
Pennsylvania State Sanatorium No. 1 (Mont Alto)▲...	TB	State	1,700	875	..	...	608
Spangler, 3,201—Cambria							
Miners' Hospital of Northern Cambria▲○	Gen	NPAssn	79	70	14	458	2,631
Spring City, 3,022—Chester							
Pennhurst State School.......	MeDe	State	2,495	2,273	..	...	136
State College, 6,226—Centre							
Pennsylvania State College Health Service Hospital....	Inst	State	31	7	..	...	788
Sunbury, 15,462—Northumberland							
Sunbury Community Hosp...	Gen	NPAssn	74	50	14	447	1,871
Susquehanna, 2,740—Susquehanna							
Simon H. Barnes Memorial Hospital	Gen	NPAssn	16	12	5	75	360
Tarentum, 9,846—Allegheny							
Allegheny Valley Hospital▲○	Gen	NPAssn	188	137	40	795	5,107
Taylor, 9,002—Lackawanna							
Taylor Hospital	Gen	NPAssn	49	40	13	318	1,498
Titusville, 8,126—Crawford							
Titusville Hospital▲	Gen	NPAssn	30	32	14	269	1,753
Torrance, 500—Westmoreland							
Torrance State Hospital▲.....	Ment	State	2,586	2,513	..	...	570
Union City, 3,843—Erie							
Henry L. Stern Memorial Hospital	Gen	NPAssn	16	9	10	152	573
Uniontown, 21,819—Fayette							
Uniontown Hospital★▲○	Gen	NPAssn	210	202	20	1,021	6,580
Warren, 14,891—Warren							
Warren General Hospital.....	Gen	NPAssn	99	72	25	405	2,400
Warren State Hospital+▲⊙....	Ment	State	2,849	2,546	..	...	608
Washington, 26,166—Washington							
Hillsview Sanitarium▲	Gen	Corp	48	40	..	...	277
Washington Hospital★▲○	Gen	NPAssn	184	135	40	915	4,741
Wawa, 300—Delaware							
Wawa Chest Hospital........	TB	NPAssn	16	16	..	...	66
Waymart, 1,095—Wayne							
Farview State Hospital.......	Ment	State	1,100	1,065	..	...	80
Waynesboro, 10,231—Franklin							
Waynesboro Hospital	Gen	NPAssn	56	42	22	535	1,514
Waynesburg, 4,891—Greene							
Greene County Memorial Hospital▲	Gen	NPAssn	90	88	17	439	3,006
Wellsboro, 3,665—Tioga							
Soldiers and Sailors Memorial Hospital	Gen	NPAssn	47	37	17	207	1,409
Wernersville, 1,160—Berks							
Wernersville State Hospital▲	Ment	State	1,600	1,867	..	...	379
West Chester, 13,289—Chester							
Chester County Hospital★▲○..	Gen	NPAssn	152	95	26	603	3,498
Darlington Sanitarium	N&M	NPAssn	25	16	..	...	152
Marshall Square Sanitarium..	N&M	Indiv	100	90	..	...	184
Memorial Hospital of Chester County▲	Gen	NPAssn	64	37	14	259	1,440
White Haven, 1,528—Luzerne							
White Haven Sanatorium+▲..	TB	NPAssn	240	137	..	...	181
Wilkes-Barre, 86,236—Luzerne							
Mercy Hospital★▲○	Gen	Church	205	160	25	658	5,371
Wilkes-Barre General Hospital★+▲○	Gen	NPAssn	360	213	43	1,145	7,805
Wyoming Valley Homeopathic Hospital▲○	Gen	NPAssn	84	64	25	443	2,306
Wilkinsburg, 29,853—Allegheny							
Columbia Hospital★▲○	Gen	Church	178	146	48	909	4,789
Williamsport, 44,355—Lycoming							
Rothfuss Clinic and Hospital.	Gen	Indiv	25	8	12	142	518
Williamsport Hospital★▲○ ...	Gen	NPAssn	231	200	44	1,107	6,658
Willow Grove, 12,000—Montgomery							
U. S. Naval Air Station Dispensary	Gen	Navy	51	6	..	...	11
Windber, 9,057—Somerset							
Windber Hospital★▲○	Gen	NPAssn	107	80	10	208	2,447
Woodville, 4,000—Allegheny							
Allegheny County Institution District Hospital	GenInst	County	863	704	..	...	1,158
Woodville State Hospital.....	Ment	State	1,928	2,492	..	...	283
York, 56,712—York							
York Hospital★+▲○	Gen	NPAssn	195	163	52	1,414	5,490

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Bellefonte, 5,304—Centre							
Western State Penitentiary Hospital	Inst	State	18	5	..	...	418
Broomall, 1,200—Delaware							
Convalescent Hospital	Conv	NPAssn	29	22	..	...	237
Rest Haven for Convalescents	Conv	Part	42	38	..	...	116
Bryn Mawr, 10,206—Montgomery							
Bryn Mawr College Infirmary	Inst	NPAssn	20	5	..	...	464
Cambridge Springs, 1,807—Crawford							
San Rosario Sanitarium.....	Conv	Church	34	19	..	...	547
Camp Hill, 3,630—Cumberland							
Pennsylvania Industrial School	Inst	State	30	No data supplied			
Chambersburg, 14,852—Franklin							
Chambersburg Maternity Home	Mat	Part	9	4	10	246	255
Chester, 59,285—Delaware							
Mercy Hospital	Gen	NPAssn	38	29	12	265	1,128
Darby, 10,334—Delaware							
St. Francis Country House..	Incur	Church	65	60	..	...	405
Ebensburg, 3,719—Cambria							
Cambria County Hospital..	Inst	County	144	140	..	...	200
Embreeville, 500—Chester							
Embreeville State Hospital...	Ment	State	298	275	..	...	35
Erie, 116,995—Erie							
Lakeview Hospital	Iso	City	80	20	10	...	329
Harmarville, 900—Allegheny							
Harmarville Convalescent Home	Conv	NPAssn	46	45	30	...	260
Harrisburg, 83,893—Dauphin							
Dauphin County Hospital....	Inst	County	170	168	..	...	102
Hazleton, 38,009—Luzerne							
St. Joseph Hospital.........	Mat	Church	23	12	23	581	629
Johnstown, 66,668—Cambria							
Municipal Hospital	Iso	City	60	3	..	...	153
Lancaster, 61,345—Lancaster							
Lancaster County Institution District	Chr	County	449	409	..	...	257
Lewisburg, 3,571—Union							
Ziegler Memorial Infirmary for Men and Infirmary for Women	Inst	NPAssn	24	3	..	...	148
Malvern, 1,680—Chester							
Point Comfort Rest Home..	Conv	Indiv	44	40	..	...	22
Mercer, 2,272—Mercer							
Mercer County Home and Hospital	Chr	County	75	76	..	...	201
Middletown, 7,046—Dauphin							
Odd Fellows' Home..........	Inst	NPAssn	42	42	..	...	58
Morganza, 900—Washington							
Pennsylvania Training School Hospital	Inst	State	40	11	..	...	762
North East, 3,704—Erie							
St. Barnabas' House by the Lake	Incur	Church	35	35	..	...	22
Oakbourne (West Chester P. O.), 100—Chester							
James C. Smith Memorial Home	Conv	Church	21	18	..	...	190
Olyphant, 9,252—Lackawanna							
Blakely Home and Hospital..	Ment	County	254	65	..	...	17
Philadelphia, 1,931,334—Philadelphia							
Belle Vista Sanatorium.......	N&M	Indiv	75	75	..	...	238
Belmont Hospital-Salvation Army Hospital	Mat	Church	10	5	10	152	162
Florence Crittenton Home...	Mat	NPAssn	18	9	12	62	81
Kenwood Sanitarium	N&M	Corp	40	..	..	...	...
Philadelphia County Prison Hospital (Holmesburg)....	Inst	County	28	8	..	...	277
Philadelphia County Prison Hospital (Reed Street).....	Inst	County	34	8	..	...	331
Philadelphia Home for Incurables	Incur	NPAssn	243	234	..	...	44
Pine Hall Convalescent Home	Conv	Indiv	22	20	..	...	42
Sharon Hall	Conv	Corp	50	50	..	...	140
Pittsburgh, 671,659—Allegheny							
Hasley Nursing Home........	Conv	Indiv	25	18	..	...	87
Salvation Army Women's Home and Hospital........	Mat	Church	10	6	10	54	88
Retreat, 2,000—Luzerne							
Luzerne County Home and Infirmary	Inst	County	500	No data supplied			
Rochester, 7,441—Beaver							
Passavant Memorial Homes for the Care of Epileptics.	Epil	Church	150	110	..	...	15
Scranton, 140,404—Lackawanna							
Municipal Hospital	Iso	City	45	12	..	...	155
Selinsgrove, 2,877—Snyder							
Selinsgrove State Colony for Epileptics	Epil	State	952	881	..	...	97
Somerset, 5,430—Somerset							
Somerset State Hospital.....	Ment	State	500	400	..	...	50
Towanda, 4,154—Bradford							
Mills Hospital	Gen	Indiv	25	14	8	210	306
Willow Grove, 12,000—Montgomery							
Willow Crest for Convalescents	Conv	NPAssn	80	63	..	...	268

RHODE ISLAND

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Central Falls, 25,248—Providence							
Notre Dame Hospital.........	Gen	NPAssn	50	38	20	546	1,659
Davisville, 250—Kent							
U. S. Naval Dispensary Hosp.	Gen	Navy	755	550	..	...	11,105
East Greenwich, 3,842—Kent							
Crawford Allen Memorial Hospital	Unit of Rhode Island Hospital, Providence						
East Providence, 32,165—Providence							
Emma Pendleton Bradley Home	NervChil	NPAssn	48	41	..	...	68
Hillsgrove, 1,000—Kent							
St. Joseph's Hospital........	TB	Church	65	42	..	...	27
Howard, 5,000—Providence							
State Hospital for Mental Diseases+▲⊙	Ment	State	3,038	2,837	..	...	758
State Infirmary▲	Gen	State	1,012	771	20	...	730
Newport, 30,532—Newport							
Newport Hospital▲○	Gen	NPAssn	154	129	47	1,046	4,798
Station Hospitals.............	Gen	Army	70	30	..	...	1,014
U. S. Naval Hospital★▲......	Gen	Navy	1,200	1,145	..	...	10,854
Pawtucket, 75,797—Providence							
Memorial Hospital★▲○	Gen	NPAssn	172	141	30	1,027	5,250
Providence, 253,504—Providence							
Butler Hospital+▲⊙	N&M	NPAssn	179	134	..	...	116
Charles V. Chapin Hospital+▲⊙	TbIsoN&M	City	265	125	..	...	2,112
Homeopathic Hospital★▲○ ..	Gen	NPAssn	162	134	34	1,137	4,918
Jane Brown Memorial Hosp.	Unit of Rhode Island Hospital, Providence						
Miriam Hospital▲	Gen	NPAssn	63	39	14	309	1,449
Providence Lying-In Hospital+▲⊙	Mat	NPAssn	175	132	175	5,272	5,783
Rhode Island Hospital★+▲○.	Gen	NPAssn	499	431	..	...	10,795
St. Joseph's Hospital★▲○....	Gen	Church	325	238	60	1,198	7,310
Quonset Point, —Washington							
U. S. Naval Air Station Dispensary	Gen	Navy	309	125	..	...	6,000
Wakefield, 4,000—Washington							
South County Hospital▲....	Gen	NPAssn	46	25	11	311	1,020
Wallum Lake, 100—Providence							
State Sanatorim+▲	TB	State	618	405	..	...	310
Westerly, 11,199—Washington							
Westerly Hospital▲	Gen	NPAssn	61	37	12	422	1,629
Woonsocket, 49,303—Providence							
Woonsocket Hospital▲	Gen	NPAssn	147	83	37	1,040	3,566

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Hoxsie, 135—Kent							
Lakeside Home and Mary Murray Preventorium	TB	NPAssn	50	33	..	...	106
La Fayette, 600—Washington							
Exeter School	MeDe	State	895	890	..	...	74
Providence, 253,504—Providence							
St. Elizabeth Home for Incurables	Incur	Church	70	68	..	...	15

SOUTH CAROLINA

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Abbeville, 4,930—Abbeville							
Abbeville County Memorial Hospital	Gen	NPAssn	40	18	7	154	930
Aiken, 6,168—Aiken							
Aiken County Hospital▲.....	Gen	County	70	45	10	393	2,259
Anderson, 19,424—Anderson							
Anderson County Hospital▲○	Gen	NPAssn	113	95	17	884	4,476
St. Mary's Hospital	Gen	NPAssn	40	16	8	20	378
...	Gen	NPAssn	72	42	20	321	2,184
...	Gen	NPAssn	93	42	22	238	1,746
Baker Memorial Sanat.▲......	Gen	NPAssn	63	55	14	385	2,710
Roper Hospital★+▲○	Gen	NPAssn	330	286	40	1,207	10,926
St. Francis Xavier Infirm.▲○	Gen	Church	111	93	26	1,090	5,697
Chester, 6,392—Chester							
Pryor Hospital	Gen	NPAssn	50	28	8	207	1,275
Clinton, 5,704—Laurens							
Hays Hospital	Gen	Part	20	10	5	93	515
Columbia, 62,396—Richland							
Columbia Hospital★▲○	Gen	County	463	270	43	869	8,902
Good Samaritan-Waverly	Gen	NPAssn	70	47	12	194	1,217
....	Orth	Corp	18	12	..	...	243
....	Gen	Church	96	69	14	552	3,082
Camp	TB	NPAssn	70	36	..	...	32
South Carolina Baptist Hospital▲○	Gen	Church	100	92	15	459	3,286
South Carolina State Hosp.○	Ment	State	4,741	4,606	..	...	1,403
Veterans Admin. Center▲.....	Gen	Vet	636	505	..	...	5,175
Waverley Sanitarium	N&M	Corp	25	22	..	...	78
—Horry							
.	Gen	NPAssn	65	42	19	585	3,883
.	Gen	Church	41	28	15	191	1,545
.	TB	Counties	101	65	..	...	79
.	Gen	NPAssn	200	154	30	662	5,730
.	*Gen*	County	56	41	6	391	2,174

SOUTH CAROLINA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Greenville, 34,734—Greenville							
Greenville County Tuberculosis Sanatorium	TB	County	75	68	..	...	61
Greenville General Hosp.★▲○.	Gen	City	331	253	31	1,332	10,551
Dr. Jervey's Private Hospital	ENT	Indiv	15	4	..	...	572
St. Francis Hospital▲	Gen	Church	115	82	30	865	4,814
Shriners Hospital for Crippled Children+▲	Orth	NPAssn	60	44	..	...	180
Working Benevolent Hosp....	Gen	NPAssn	26	12	4	49	456
Greenwood, 13,020—Greenwood							
Brewer Hospital	Gen	NPAssn	32	15	4	72	606
Greenwood Hospital▲	Gen	NPAssn	65	45	15	500	2,044
Hartsville, 5,399—Darlington							
Byerly Hospital	Gen	NPAssn	66	37	18	416	2,596
Powe Hospital	Gen	Indiv	32	No data supplied			
	Gen	Indiv	56	24	10	130	1,443
	Gen	Corp	58	28	12	166	1,446
Whitehead Infirmary	Gen	Indiv	12	10	5	93	489
Lancaster, 4,430—Lancaster							
Marion Sims Memorial Hosp.▲	Gen	NPAssn	64	33	14	555	1,011
Laurens, 6,894—Laurens							
Laurens County Hospital....	Gen	County	33	27	8	230	1,455
Moncks Corner, 1,165—Berkeley							
Berkeley County Hospital....	GenTb	NPAssn	46	14	8	137	756
Moultrieville, 515—Charleston							
Station Hospital▲	Gen	Army	102	48	4	30	2,532
Mullins, 4,392—Marion							
Martin Hospital	Gen	Indiv	35	20	5	83	1,302
Mullins Hospital○	Gen	NPAssn	58	45	11	472	2,796
Navy Yard, 1,025—Charleston							
Pine Haven Sanatorium.....	TB	County	66	66	..	...	181
U. S. Naval Hospital★▲......	Gen	Navy	1,018	576	24	373	9,377
Newberry, 7,510—Newberry							
Newberry County Hospital...	Gen	NPAssn	30	24	13	273	1,321
Orangeburg, 10,521—Orangeburg							
Tri-County Hospital▲○	Gen	City	132	118	14	520	4,964
Urological Institute...........	Unit of Tri-County Hospital						
Parris Island, 250—Beaufort							
U. S. Naval Hospital★▲.......	Gen	Navy	610	613	14	181	7,886
Ridgeland, 1,021—Jasper							
Ridgeland Hospital	Gen	NPAssn	40	4	8	...	1,304
Rock Hill, 15,009—York							
Dunlap Hospital	Gen	Indiv	14	2	..	...	321
St. Philip's Mercy Hospital..	Gen	Church	65	62	10	451	2,400
York County Hospital▲○....	Gen	County	79	77	14	314	3,262
Seneca, 2,155—Oconee							
Oconee County Hospital.....	Gen	NPAssn	38	35	10	384	1,047
Spartanburg, 32,249—Spartanburg							
Mary Black Memorial Hospital▲○	Gen	NPAssn	60	40	9	112	2,273
Spartanburg General Hospital▲○	GenTb	County	293	228	57	1,475	9,323
State Park, 100—Richland							
Palmetto Sanatorium	Unit of South Carolina Sanatorium						
South Carolina Sanatorium▲	TB	State	550	428	..	...	602
Summerville, 3,023—Dorchester							
Dorchester County Hospital.	Gen	County	49	20	16	203	982
Sumter, 15,874—Sumter							
Tuomey Hospital▲○	Gen	NPAssn	150	110	30	715	4,100
Travellers Rest, 1,200—Greenville							
Coleman Hospital	Gen	Part	15	8	5	97	633
Union, 8,478—Union							
Wallace Thomson Hospital..	Gen	City	25	11	11	213	997
Walterboro, 3,373—Colleton							
Charles Es'Dorn Hospital....	Gen	County	48	32	17	100	1,039
West Columbia, 1,744—Lexington							
Sandhill Public Health Hosp.	Ven	State	200	..	..	...	...
Woodruff, 3,508—Spartanburg							
Workman Memorial Hosp..	Gen	Indiv	12	8	3	40	601

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Clinton, 5,704—Laurens							
State Training School.......	MeDe	State	993	953	..	...	134
Newberry, 7,510—Newberry							
People's Hospital	Gen	NPAssn	15	6	3	11	289

SOUTH DAKOTA

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Aberdeen, 17,015—Brown							
St. Luke's Hospital▲○........	Gen	Church	135	141	30	717	6,284
Belle Fourche, 2,496—Butte							
John Burns Memorial Hosp.	Gen	NPAssn	26	11	10	120	520
Brookings, 5,346—Brookings							
Brookings Municipal Hosp...	Gen	City	37	26	8	203	1,579
Burke, 602—Gregory							
Burke Hospital	Gen	NPAssn	16	10	8	129	670
Cheyenne Agency, 121—Dewey							
Cheyenne River Indian Hosp..	Gen	IA	41	14	6	44	236
Deadwood, 4,100—Lawrence							
St. Joseph's Hospital........	Gen	Church	56	51	12	231	2,284
		Part	20	13	6	54	316
		NPAssn	25	13	7	100	505
Flandreau, 2,212—Moody							
Flandreau Municipal Hosp....	Gen	City	18	2	4	84	293

SOUTH DAKOTA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Fort Meade, —Meade							
Veterans Admin. Hospital▲	Ment	Vet	720	...	..	Estab.	1945
Fort Thompson, 80—Buffalo							
Crow Creek Hospital	Gen	IA	20	13	5	42	360
Gregory, 1,246—Gregory							
Mother of Grace Hospital	Gen	Church	17	11	7	119	630
Hot Springs, 4,083—Fall River							
Lutheran Sanatorium and Hospital	Gen	Church	40	34	8	103	723
Out Lady of Lourdes Hospital and Sanitarium	Gen	Church	55	29	9	90	1,221
Veterans Admin. Hospital▲	Gen	Vet	272	180	..	...	1,269
Hoven, 369—Potter							
Hoven Municipal Hospital	Gen	Church	18	12	5	90	860
Huron, 10,843—Beadle							
Sprague Hospital▲◇	Gen	NPAssn	58	51	10	315	1,848
Lead, 7,520—Lawrence							
Homestake Hospital▲	Gen	NPAssn	25	11	5	1	239
Madison, 5,018—Lake							
Madison Community Hosp.▲	Gen	NPAssn	50	37	12	248	1,088
Milbank, 2,745—Grant							
St. Bernard's Providence Hospital	Gen	Church	31	16	8	158	735
Miller, 1,460—Hand							
Miller Hospital and Clinic	Gen	Part	18	15	7	111	620
Mitchell, 10,633—Davison							
Methodist State Hospital▲◇	Gen	Church	100	105	15	340	3,597
St. Joseph's Hospital▲◇	Gen	Church	118	90	20	391	2,619
Mobridge, 3,008—Walworth							
Lowe Hospital	Gen	Indiv	20	11	6	102	561
Mobridge Hospital	Gen	NPAssn	35	21	7	183	975
Parkston, 1,305—Hutchinson							
St. Benedict Hospital	Gen	Church	15	13	6	177	745
Pierre, 4,322—Hughes							
St. Mary's Hospital▲◇	Gen	Church	102	89	18	305	2,447
Pine Ridge, 618—Shannon							
Pine Ridge Indian Hospital	Gen	IA	41	32	14	109	958
Rapid City, 13,844—Pennington							
Black Hills General Hosp.▲	Gen	NPAssn	51	39	10	174	1,382
St. John's McNamara Hospital▲◇	Gen	Church	100	78	25	511	3,046
Sioux Sanatorium▲	TB	IA	135	106	..	...	168
Redfield, 2,428—Spink							
Baldwin Community Hosp.	Gen	City	15	10	5	136	415
Rosebud, 238—Todd							
Rosebud Agency Indian Hosp.	Gen	IA	40	31	7	85	897
Sanator, 10—Custer							
Moodie Memorial Tuberculosis Sanatorium	Unit of South Dakota State Sanatorium for Tuberculosis						
South Dakota State Sanatorium for Tuberculosis▲	TB	State	192	130	..	...	96
Sioux Falls, 40,832—Minnehaha							
McKennan Hospital▲◇	Gen	Church	138	111	47	865	5,249
Sioux Valley Hospital▲◇	Gen	NPAssn	170	134	30	774	4,961
Sisseton, 2,513—Roberts							
Sisseton Indian Hospital	Gen	IA	32	11	8	40	364
Tekakwitha Hospital	Gen	Church	40	9	11	144	940
Volga, 632—Brookings							
Volga Hospital	Gen	NPAssn	18	8	8	108	439
Watertown, 10,617—Codington							
Bartron Hospital▲◇	Gen	NPAssn	75	63	14	312	2,299
Luther Hospital▲◇	Gen	Church	70	60	13	311	2,214
Webster, 2,173—Day							
Peabody Memorial Hospital▲	Gen	NPAssn	42	21	9	68	480
Winner, 2,426—Tripp							
Winner General Hospital	Gen	Corp	17	7	8	173	445
Yankton, 6,798—Yankton							
Sacred Heart Hospital▲◇	Gen	Church	170	126	26	393	3,950
Yankton State Hospital	Ment	State	1,888	1,630	..	...	361

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Flandreau, 2,212—Moody							
Flandreau Indian School Hospital	Inst	IA	26	5	..	...	431
...	Gen	Indiv	10	1	2	10	42
Hot Springs, 4,083—Fall River							
State Soldiers' Home Hosp.	Inst	State	35	17	..	...	131
Redfield, 2,428—Spink							
State School and Home for Feebleminded	MeDe	State	720	700	..	...	58
Sioux Falls, 40,832—Minnehaha							
Moe Memorial Hospital and Home	Conv	Indiv	42	No data supplied			
Wagner, 1,319—Charles Mix							
Duggan Hospital	Gen	Indiv	12	9	5	103	363
Yankton Indian Hospital	Gen	IA	25	18	5	36	655

TENNESSEE

Hospitals and Sanatoriums							
Athens, 6,930—McMinn							
Epperson Clinic Hospital	Gen	Indiv	51	22	8	202	1,408
Force Hospital	Gen	Part	26	20	12	253	1,384
Bristol, 14,004—Sullivan							
Fort Shelby Hospital	Gen	Indiv	12	7	6	250	350
Hooks-English Infirmary	ENT	Part	10	5	..	...	600
Brownsville, 4,012—Haywood							
Haywood County Memorial Hospital	Gen	NPAssn	30	13	5	176	1,153

TENNESSEE—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Chattanooga, 128,163—Hamilton							
Baroness Erlanger Hosp.★+▲◇	Gen	CyCo	371	280	89	1,845	10,637
Earl R. Campbell Clinic	Gen	Indiv	21	16	7	134	1,119
Newell and Newell Sanit.▲◇	Gen	Part	65	45	5	55	1,963
Physicians and Surgeons Hospital	Gen	Indiv	19	19	8	231	895
Pine Breeze Sanatorium+▲	TB	NPAssn	250	211	..	...	833
T. C. Thompson Children's Hospital+▲⊙	Chil	CyCo	75	39	25	...	1,291
Woman's Clinic	Gen	Indiv	17	13	13	318	562
Clarksville, 11,831—Montgomery							
Clarksville Home Infirmary	Gen	Indiv	25	7	3	11	230
Clarksville Hospital	Gen	NPAssn	42	27	16	399	1,577
Cleveland, 11,351—Bradley							
Physicians and Surgeons Hospital	Gen	Indiv	25	11	4	74	710
Speck Hospital	Gen	NPAssn	30	15	10	173	1,000
Columbia, 10,579—Maury							
Kings Daughters Hospital	Gen	NPAssn	50	30	8	347	1,999
Dayton, 1,870—Rhea							
Broyles Hospital	Gen	Indiv	12	7	4	84	366
Thomison Hospital	Gen	Indiv	15	12	4	60	800
Dyersburg, 10,034—Dyer							
Baird-Brewer General Hosp.▲	Gen	Corp	42	16	12	152	1,192
Elizabethton, 8,516—Carter							
St. Elizabeth General Hosp.	Gen	Corp	35	25	12	372	1,834
Erwin, 3,350—Unicoi							
Erwin Community Hospital	Gen	NPAssn	13	5	3	175	781
Franklin, 4,120—Williamson							
Dan German Hospital	Gen	Part	16	14	6	294	968
Greeneville, 6,784—Greene							
Campbell's Hospital	Gen	Indiv	10	4	3	48	385
Greeneville Sanatorium and Hospital▲◇	Gen	Corp	50	28	11	116	1,197
Laughlin Clinic	Gen	Indiv	22	17	10	222	655
Learline Reaves Sanatorium	TB	State	32	25	..	...	91
Takoma Hospital and Sanitarium▲◇	Gen	NPAssn	52	47	12	229	1,967
Harriman, 5,620—Roane							
Harriman Hospital	Gen	City	40	27	8	398	2,856
Humboldt, 5,160—Gibson							
Oursler Clinic	Gen	Indiv	12	4	4	95	547
St. Mary's Hospital	Gen	Church	50	..	10	Estab.	1945
Jackson, 24,332—Madison							
Doctors Hospital	Gen	Part	25	14	6	163	956
Fitts-White Clinic	Gen	Part	40	27	12	238	1,445
Memorial Hospital	Gen	NPAssn	36	19	10	103	1,307
Webb-Williamson Hospital-Clinic	Gen	Corp	30	23	6	228	1,453
Jefferson City, 2,576—Jefferson							
Jefferson Hospital	Gen	Indiv	21	13	7	88	458
Johnson City, 25,332—Washington							
Appalachian Hospital▲◇	Gen	NPAssn	72	68	20	776	3,064
Budd Clinic and Hospital	Gen	Indiv	12	10	3	64	499
Campbell's Eye, Ear, Nose and Throat Hospital	ENT	Indiv	10	3	..	...	800
Jones Eye, Ear, Nose and Throat Hospital▲	ENT	Part	27	11	..	...	1,246
Kingsport, 14,404—Sullivan							
Holston Valley Community Hospital▲	Gen	NPAssn	114	76	33	1,014	4,026
Knoxville, 111,580—Knox							
Beverly Hills Sanatorium	TB	CyCo	145	67	..	...	93
Dr. H. E. Christenberry Eye, Ear, Nose and Throat Infirmary	ENT	Indiv	12	3	..	...	1,405
Eastern State Hospital	Ment	State	1,850	1,828	..	...	599
Fort Sanders Hospital▲◇	Gen	NPAssn	200	197	40	1,518	8,650
Knoxville General Hosp.★+▲◇	Gen	City	285	160	40	1,200	8,729
St. Mary's Memorial Hosp.▲◇	Gen	Church	150	140	25	740	5,334
La Follette, 4,010—Campbell							
La Follette Hospital	Gen	Indiv	23	12	7	68	775
Lawrenceburg, 3,807—Lawrence							
Lawrenceburg Sanitarium and Hospital	Gen	Church	20	15	10	222	970
Lebanon, 5,950—Wilson							
Martha Gaston Hospital	Gen	Indiv	25	13	6	93	687
McFarland Hospital	Gen	Indiv	50	55	6	327	2,014
Lewisburg, 3,582—Marshall							
Gordon Hospital	Gen	Indiv	24	17	4	52	887
Wheat Memorial Hospital	Gen	Indiv	13	7	4	112	420
Loudon, 3,017—Loudon							
Charles H. Bacon Hospital	Gen	County	28	11	14	175	659
Madison College, 510—Davidson							
Madison Rural Sanitarium and Hospital▲◇	Gen	NPAssn	118	115	9	130	2,196
Maryville, 5,609—Blount							
Doctors Hospital	Gen	NPAssn	50	36	14	416	1,642
Memphis, 292,942—Shelby							
Baptist Memorial Hosp.★+▲◇	Gen	Church	490	482	20	1,413	20,403
Carrol Turner Sanatorium	N&M	Indiv	26	25	..	...	156
Collins Chapel Connectional Hospital	Gen	Church	60	50	15	192	1,832
Crippled Children's Hospital School	Orth	NPAssn	42	35	..	...	86
Gailor Memorial Psychiatric Hospital	Ment	State	40	25	..	...	313
Gartly-Ramsay Hospital▲	N&M	Corp	43	40	..	...	1,285

Key to symbols and abbreviations is on page 1091

TENNESSEE—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Hospital for Crippled Adults▲	Orth	NPAssn	66	30	..	...	264
John Gaston Hospital★+▲◇	Gen	City	489	462	61	1,670	14,220
McLemore Clinic	Gen	Corp	45	37	12	12	470
Memphis Eye, Ear, Nose and Throat Hospital+▲	ENT	Church	60	33	..	...	3,609
Methodist Hospital★+▲◇	Gen	Church	250	253	50	2,462	11,255
Psychiatric Hospital	Unit of Western State Hospital, Western State, Tenn.						
St. Joseph Hospital★+▲◇	Gen	Church	280	242	60	1,397	10,266
U. S. Marine Hospital▲	Gen	USPHS	130	74	..	...	1,416
U. S. Naval Air Station Dispensary	Gen	Navy	52	29	..	...	2,268
U. S. Naval Hospital★▲	Gen	Navy	1,457	1,328	..	...	6,193
Veterans Admin. Hospital▲	Gen	Vet	565	448	..	...	6,162
Wallace Sanitarium	N&M	Indiv	75	25	..	...	876
Willis C. Campbell Clinic Hospital+▲	Orth	Part	60	51	..	...	1,573
Morristown, 8,050—Hamblen							
Hamblen Hospital	Gen	NPAssn	30	11	5	135	531
Nabers Clinic	Gen	Indiv	20	14	6	144	907
Mountain Home, 250—Washington							
Veterans Admin. Home▲	Gen	Vet	565	365	..	...	3,725
Murfreesboro, 9,495—Rutherford							
Rutherford Hospital▲	Gen	NPAssn	45	25	10	409	1,455
Veterans Admin. Hospital▲⊙	Ment	Vet	1,006	890	..	...	1,251
Nashville, 167,402—Davidson							
Central State Hospital	Ment	State	2,000	1,969	..	...	525
City View Sanitarium	N&M	Indiv	45	34	..	...	452
Davidson County Hospital	Ment	County	797	691	4	12	481
Davidson County Tuberculosis Hospital+▲	TB	County	300	196	..	...	296
Geo. W. Hubbard Hospital of Meharry Med. College★+▲◇	Gen	NPAssn	165	120	21	361	3,080
Hospital for the Criminal Insane	Unit of Central State Hospital						
Middle Tennessee Tuberculosis Hospital	TB	State	54	42	..	...	293
Nashville General Hosp.★+▲◇	Gen	City	269	170	36	862	5,718
Protestant Hospital★+▲◇	Gen	NPAssn	110	93	18	808	4,150
Riverside Sanitarium and Hospital	Gen	Church	26	21	2	13	361
St. Thomas Hospital★+▲◇	Gen	Church	210	183	40	1,302	7,413
Vanderbilt University Hospital★+▲◇	Gen	NPAssn	340	218	58	1,154	7,159
Veterans Admin. Hospital▲	Gen	Vet	2,215	...	..	Estab. 1946	
Oak Ridge, —Anderson							
Oak Ridge Hospital★▲⊙	Gen	Fed	300	230	40	1,168	13,406
Oakville, 163—Shelby							
Oakville—Memorial Sanat.	TB	CyCo	375	276	..	...	441
Paris, 6,395—Henry							
McSwain Clinic	Gen	Indiv	24	8	4	82	484
Nobles Memorial Hospital	Gen	Indiv	30	17	7	109	1,057
Pleasant Hill, 178—Cumberland							
"Uplands" Cumberland Mountain Hosp. and Sanatorium	GenTb	NPAssn	50	40	6	73	505
Pressmen's Home, 200—Hawkins							
International Printing Pressmen and Assistants' Union Sanatorium	TB	NPAssn	50	30	..	...	11
Pulaski, 5,314—Giles							
	Gen	Indiv	23	10	3	161	564
R	Unit of Oakville Memorial Sanatorium, Oakville						
Rockwood, 3,981—Roane							
Hosp.	Gen	NPAssn	50	23	10	289	1,427
	Gen	Indiv	12	8	4	196	485
Sevierville, 1,101—							
Broady Hospital	Gen	Indiv	11	4	2	93	365
tal..	Gen	Church	45	13	10	84	1,073
tal..	Gen	County	25	15	7	77	519
Sweetwater, 2,593—Monroe							
Sweetwater *Hospital*▲	Gen	NPAssn	28	12	4	112	4,385
Union City, 7,256—Obion							
Union City Clinic	Gen	Part	15	13	3	88	769
Western State Hospital, —Hardeman							
Western State Hospital▲	Ment	State	2,512	2,292	..	...	748
Woodbury, 663—Cannon							
Good Samaritan Hospital	Gen	Part	40	34	10	172	1,421

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Chattanooga, 128,163—Hamilton							
William L. *Bork Memorial* Hospital	Ment	County	300	260	..	...	98
raining School for Feebleminded Persons	McDe	State	650	708	..	...	72
Fayetteville, 4,684—Lincoln							
Lincoln County Hospital	Gen	*County*	32	23	8	289	1,330
Knoxville, 111,580—Knox							
Tennessee School for Deaf	Inst	State	20	2	..	...	233
Weston M. Fulton Memorial Hospital	*Inst*	State	28	2	..	...	176
Memphis, 292,942—Shelby							
Dr. Henry G. *Hill Clinic*	*Orth*	Indiv	12	5	..	...	300
Shelby County Hospital	Inst	County	800	440	..	...	274

TENNESSEE—Continued

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Nashville, 167,402—Davidson							
Junior League Home for Crippled Children	Orth	NPAssn	36	36	..	...	90
Tennessee State Penitentiary Hospital	Inst	State	100	85	..	...	401
Shelbyville, 6,537—Bedford							
Bedford County Hospital	*Gen*	NPAssn	39	16	6	360	1,740

TEXAS

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Abilene, *26,612—Taylor*							
Abilene State Hospital	Epil	State	1,394	1,279	..	...	182
Hendrick *Memorial Hosp.*▲◇	*Gen*	Church	158	102	25	918	5,792
St. Ann Hospital	Gen	Church	35	27	14	330	1,689
Alice, 7,792—Jim Wells							
Physicians and Surgeons Hospital	Gen	Corp	32	15	9	300	1,009
Almeda, *300*—Harris							
Keightley Hospital	N&M	Indiv	50	25	..	...	102
Amarillo, 51,686—Potter							
Northwest Texas Hospital▲◇	Gen	County	150	106	25	1,065	5,939
Potter County Tuberculosis Cottage	Unit of Northwest Texas Hospital						
St. Anthony's Hospital▲◇	Gen	Church	122	108	28	646	4,163
Veterans Admin. Hospital▲	Gen	Vet	156	138	..	...	1,297
Atlanta, 2,453—Cass							
Ellington Memorial Hosp.	Gen	Part	12	6	4	150	360
Austin, 87,930—Travis							
Austin State Hospital	Ment	State	2,810	2,742	..	...	978
Austin-Travis County Tuberculosis Sanatorium	TB	CyCo	48	35	..	...	45
Brackenridge Hospital★▲◇	Gen	City	237	146	35	951	5,503
Holy Cross Hospital	Gen	Church	22	14	7	186	593
St. David's Hospital	Gen	Church	61	57	12	290	2,852
Seton Hospital▲◇	Gen	Church	110	91	30	922	3,957
Baird, 1,810—Callahan							
Callahan County Hospital	Gen	County	20	7	4	84	645
Bastrop, 1,976—Bastrop							
F. A. Orgain Hospital	Gen	Indiv	13	5	6	103	600
Bay City, 6,594—Matagorda							
Matagorda General Hospital	Gen	County	45	25	10	288	900
spital	Gen	City	60	30	12	82	1,603
	Gen	Church	130	101	..	...	4,097
Jefferson County Tuberculosis *Hospital*	TB	*County*	115	75	..	...	75
Jefferson County Tuberculosis *Hospital No. 2*	TB	County	60	31	..	...	33
St. Therese Hospital▲	Gen	Church	90	87	25	1,129	4,140
Beeville, 6,789—Bee							
Beeville Hospital and Clinic	Gen	Indiv	40	29	15	201	1,150
Thomas Memorial Hospital	Gen	Corp	16	11	8	51	619
U. S. Naval Air Station *Dispensary*	Gen	Navy	39	12	6	105	1,361
Bellville, 1,347—Austin							
Bellville Hospital	Gen	Part	12	10	0	105	603
Belton, 3,572—Bell							
Belton Hospital	Gen	Part	12	8	6	137	513
Big Spring, 12,604—Howard							
Big Spring Hospital	Gen	Corp	35	20	6	127	1,353
Big Spring State Hospital	Ment	State	405	455	..	...	82
Cowper Clinic and Hospital	Gen	Indiv	12	10	5	173	509
Malone and Hogan Clinic-Hospital	Gen	Part	39	27	15	291	1,700
Blanco, 453—Blanco							
Hospital in the Hills	Gen	Part	14	5	4	62	302
Bonham, 6,349—Fannin							
S. B. Allen Memorial Hospital	Gen	NPAssn	37	24	10	257	727
Borger, 10,018—Hutchinson							
Casa Serena Hospital	Gen	NPAssn	12	5	3	40	243
North Plains Hospital	Gen	County	58	37	15	445	3,165
Bowie, 3,470—Montague							
Bowie Clinic *Hospital*	*Gen*	*Corp*	15	13	4	126	529
Brady, 5,002—McCulloch							
Brady *Hospital*	*Gen*	*Part*	45	30	12	250	1,647
Brenham, 6,435—Washington							
St. Francis *Hospital*	Gen	Church	25	12	7	110	633
Sarah B. Milroy Memorial *Hospital*	Gen	Corp	22	11	4	129	778
Brownfield, 4,009—Terry							
Treadaway-Daniell Hospital	Gen	*Part*	22	10	10	226	1,165
Brownsville, 22,083—Cameron							
Mercy Hospital▲	Gen	Church	30	25	18	339	1,521
Brownwood, 13,398—Brown							
Brownwood Memorial Hosp.	Gen	NPAssn	75	44	23	745	3,049
Medical Arts Hospital	Gen	NPAssn	36	*No data supplied*			
Bryan, 11,842—Brazos							
Bryan Hospital	Gen	Indiv	40	30	8	263	1,329
St. Joseph Hospital	Gen	Church	25	13	10	226	953
Burnet, 1,915—Burnet							
Shepperd Allen Hospital	Gen	Part	17	12	5	130	1,210
	Gen	*Indiv*	9	7	4	88	350
	Gen	Indiv	30	17	5	101	821
Newton *Memorial Hospital*	Gen	NPAssn	50	25	8	100	1,466
Camp Wallace (Galveston P. O.), —Galveston							
U. S. *Naval Special* Hospital	*Gen*	Navy	430	...	..	Estab. 1945	

Key to symbols and abbreviations is on page 1091

TEXAS—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census†	Bassinets	Number of Births	Admissions†
Canadian, 2,151—Hemphill							
Canadian Hospital	Gen	Indiv	10	4	3	75	260
Center, 3,010—Shelby							
Center Sanitarium	Gen	Indiv	18	4	3	215	867
Warren Hospital	Gen	Part	12	3	1	50	260
Childress, 6,464—Childress							
Jeter Townsend Hospital	Gen	Part	20	6	6	219	915
Cisco, 4,868—Eastland							
Graham Sanitarium	Gen	Indiv	22	5	4	58	650
Clarksville, 4,095—Red River							
Red River County Hospital	Gen	County	38	8	8	196	842
Cleburne, 10,558—Johnson							
Cleburne Sanitarium	Gen	Indiv	22	10	6	170	757
Knox Hospital	Gen	Indiv	10	3	10	194	375
Clifton, 1,732—Bosque							
Goodall and Witcher Clinic Hospital	Gen	Part	15	8	6	119	663
Coleman, 6,054—Coleman							
Overall Memorial Hospital	Gen	CyCo	50	20	6	253	1,409
College Station, 2,184—Brazos							
Agricultural and Mechanical College Hospital	Inst	State	150	8			1,087
Colorado City, 5,213—Mitchell							
Root Memorial Hospital	Gen	Indiv	13	12	11	162	784
Columbus, 2,422—Colorado							
Columbus Hospital and Clinic	Gen	Part	20		5	Reorganized	
Commerce, 4,699—Hunt							
Allen Hospital	Gen	Indiv	10	8	4	115	272
Leberman Hospital	Gen	Indiv	12	5	7	79	337
Conroe, 4,624—Montgomery							
Montgomery County Hosp	Gen	County	45	24	8	242	1,488
Corpus Christi, 57,301—Nueces							
Fred Roberts Memorial Hospital▲	Gen	NPAssn	70	28	10	204	1,642
Memorial Hospital	Gen	CyCo	102	58	31	433	2,780
Spohn Hospital▲	Gen	Church	91	64	31	639	3,989
U S Naval Air Station Dispensary	Gen	Navy	74	43			3,870
U S Naval Hospital★▲	Gen	Navy	1,374	1,051	48	889	13,176
Corsicana, 15,232—Navarro							
Corsicana Hospital	Gen	NPAssn	20	8	2	57	524
Navarro Clinic Hospital	Gen	Part	20	14	8	158	1,084
Physicians and Surgeons Hospital	Gen	County	50	22	12	270	1,282
Crockett, 4,536—Houston							
Butler Memorial Hospital	Gen	Indiv	30		5		
Jim Smith Memorial Hosp	Gen	Part	24	8	4	132	680
Stokes Dean Hosp and Clinic	Gen	Part	16	9	5	74	654
Crowell, 1,817—Foard							
Foard County Hospital	Gen	County	13	4	4	68	336
Crystal City, 6,529—Zavala							
Crystal Hospital	Gen	Indiv	12	6	4	74	559
Cuero, 5,474—DeWitt							
Burns Hospital	Gen	Church	35	18	6	90	910
Cuero Hospital and Clinic	Gen	Indiv	25	8	5	112	851
Dalhart, 4,682—Dallam							
Loretto Hospital	Gen	Church	31	20	21	192	1,101
Dallas, 294,734—Dallas							
Baylor University Hosp★+▲○	Gen	Church	432	306	68	2,808	15,343
Beverly Hills Sanitarium	N&M	Corp	32	32			962
Bradford Memorial Hospital for Babies	Unit of Children's Medical Center						
Carman Sanatorium	TB	Part	25	24			40
Children's Hospital	Unit of Children's Medical Center						
Children's Medical Center+▲○	Chil	NPAssn	106	30			2,416
Dallas Medical and Surgical Clinic Hospital▲	Gen	Part	27	23			1,879
Gaston Hospital▲	Gen	NPAssn	57	53			1,941
Medical Arts Hospital+▲	Gen	Corp	112	105			5,045
Methodist Hospital★+▲○	Gen	Church	208	184	42	1,402	8,488
Nightingale Lying In Hosp	Unit of Baylor University Hospital						
Parkland Hospital★+▲○	Gen	CyCo	388	245	30	1,253	7,435
Pinkston Clinic	Gen	Indiv	18	14	4	186	508
St Paul's Hospital★+▲○	Gen	Church	280	276	30	2,376	12,805
Texas Scottish Rite Hospital for Crippled Children+▲	Orth	NPAssn	75	54			562
Timberlawn Sanitarium	N&M	Corp	43	37			275
U S Naval Air Station Dispensary	Gen	Navy	100	58			2,040
Veterans Admin Hospital▲	Gen	Vet	249	200			2,800
Woodlawn Hospital	TB	CyCo	104	90			274
Decatur, 2,578—Wise							
Decatur Clinic Hospital	Gen	Indiv	14	10	6	195	3,727
Rogers Hospital	Gen	Indiv	30	15	6	186	1,198
Denison, 17,581—Grayson							
Missouri Kansas Texas Railroad Employees Hospital	Indus	NPAssn	70	17			600
Denton, 11,192—Denton							
Denton Hospital and Clinic	Gen	Indiv	35	21	8	346	1,[illegible]
Eagle Lake, 2,194—Colorado							
Laughlin Hospital	Gen	Indiv	12	8	5	60	409
East Bernard, 600—Wharton							
Albert Schuhmann Hospital	Gen	Indiv	10	6	4	110	456
Eden, 1,607—Concho							
Eden Clinic Hospital	Gen	Indiv	11	4	5	47	351
Edinburg, 8,718—Hidalgo							
Grandview Hospital	Gen	CyCo	65	19	12	[illegible]	1,[illegible]
El Campo, [illegible]—Wharton							
Nightingale Hospital	Gen	County	65	40	14	219	1,909

TEXAS—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census†	Bassinets	Number of Births	Admissions†
Electra, 5,588—Wichita							
Electra Hospital	Gen	Indiv	25	8	7	175	455
Elgin, 2,008—Bastrop							
Fleming Hospital	Gen	Corp	16	3	6	72	709
El Paso, 96,810—El Paso							
El Paso City County Hosp★▲	Gen	CyCo	192	100	19	172	2,441
El Paso Masonic Hospital	Gen	NPAssn	65	61	18	446	2,[illegible]
El Paso Rapid Treatment Center	Ven	State	100	40			2,400
Hotel Dieu Sisters Hosp▲○	Gen	Church	146	112	51	1,409	4,[illegible]
Newark Conference Maternity Hospital	Mat	Church	18	9	16	[illegible]	[illegible]
Providence Hospital▲	Gen	Indiv	40	[illegible]			1,[illegible]
St Joseph's Sanatorium	TB	Church	75	40			162
Southwestern General Hosp▲	Gen	Corp	100	70	25	441	2,[illegible]
William Beaumont General Hospital★▲	Gen	Army	700	409	7	88	5,949
Floresville, 1,708—Wilson							
Blake Hospital	Gen	Indiv	12	8	5	101	409
Oxford Hospital	Gen	Indiv	16	3	4	47	26[illegible]
Floydada, 2,776—Floyd							
Floydada Hospital	Gen	Indiv	7	3	3	40	206
Fort Crockett,—Galveston							
Station Hospital	Gen	Army	46	20			924
Fort Worth, 177,662—Tarrant							
All Saints Hospital+▲	Gen	Church	85	92	1	905	4,[illegible]
City and County Hosp★▲○	Gen	CyCo	108	95	20	488	[illegible]
W I Cook Memorial Hosp▲	Gen	NPAssn	35	34	8	6	1,276
Ethel Ransom Memorial Hospital	Gen	Part	50	25	10	49	74
Fort Worth Children's Hosp	Chil	NPAssn	37	17			210
Harris Memorial Methodist Hospital★+▲○	Gen	Church	279	262	89	2,[illegible]	10,41[illegible]
Pennsylvania Avenue Hosp	Gen	Indiv	67	60	10	[illegible]	[illegible]
St Joseph's Hospital★▲○	Gen	Church	215	168	41	1,602	8,821
U S Public Health Service Hospital▲	[illegible]	USPHS	1,242	964			2,911
F[illegible]							
[illegible] Clinic	Gen	Corp	17	10	4	165	6[illegible]
Keidel Memorial Hospital	Gen	Indiv	12	10	4	84	333
Freeport, 2,579—Brazoria							
Freeport Hospital	Gen	NPAssn	18	14	6	221	1,088
Freer, 2,346—Duval							
Thomas Spann Hospital	Gen	Part	12	7	6	75	412
Gainesville, 9,651—Cooke							
Gainesville Sanitarium	Gen	Corp	40	19	10	212	989
Medical and Surgical Hospital	Gen	Indiv	18	10	8	270	602
Galveston, 60,862—Galveston							
Galveston State Psychopathic Hospital	Ment	State	150			Reopened	
Hospital for Crippled and Deformed Children	Unit of John Sealy Hospital						
John Sealy Hospital★+▲○	Gen	State	499	384	20	899	7,484
Negro Hospital	Unit of John Sealy Hospital						
St Mary's Infirmary+▲○	Gen	Church	150	119	3[illegible]	1,008	4,474
U S Marine Hospital▲	Gen	USPHS	160	157			3,784
Gatesville, 3,177—Coryell							
Coryell Memorial Hospital	Gen	County	34	17	8	287	1,372
Georgetown, 3,682—Williamson							
Martin Hospital	Gen	Indiv	20	8	5	74	562
Gilmer, 3,138—Upshur							
Oak Lawn Sanitarium	Gen	Part	15	4	[illegible]	96	600
Ragland Clinic Hospital	Gen	Part	21	9	7	231	1,117
Gladewater, 4,454—Gregg							
Hancock Clinic and Hospital	Gen	Indiv	22	13	6	199	1,182
Leake Clinic Hospital	Gen	Indiv	17		3	Reopened	
Gonzales, 4,722—Gonzales							
Holmes Hospital	Gen	Indiv	25	8	5	45	2[illegible]
Goose Creek, 6,929—Harris							
Goose Creek Hospital	Gen	Corp	27	20	10	450	2,070
Lillie and Duke Hospital	Gen	Part	22	15	8	208	1,[illegible]7
Gorman, 1,157—Eastland							
Blackwell Sanitarium	Gen	Part	40	30	6	470	1,940
Graham, 5,175—Young							
Graham Hospital	Gen	NPAssn	25	17	6	199	896
Greenville, 19,995—Hunt							
Goode Clinic and Hospital	Gen	Indiv	12	5	6	71	250
Dr Joe Becton's Hospital	Gen	Indiv	30	12	5	150	1,101
Groesbeck, 2,272—Limestone							
Dr Cox's Hospital	Gen	Indiv	10	4	5	68	461
Hallettsville, 1,581—Lavaca							
Renger Hospital	Gen	Indiv	12	8	6	106	491
Harlingen, 1[illegible]06—Cameron							
Valley Baptist Hospital▲	Gen	Church	82	66	29	573	2,[illegible]
Haskell, [illegible]—Haskell							
Haskell County Hospital	Gen	County	2[illegible]	12	6	152	709
Henderson, 6,437—Rusk							
Henderson Memorial Hospital	Gen	NPAssn	50	19	7	2[illegible]	1,5[illegible]
Hereford, 2,[illegible]—Deaf Smith							
Deaf Smith County Hospital	Gen	County	20	8	6	171	[illegible]
Hillsboro, 7,[illegible]—Hill							
Boyd Sanitarium	Gen	Indiv	2[illegible]	14	6	1[illegible]	847
Hitchcock, 1,000—Galveston							
U S Naval Air Station Dispensary	Gen	Navy	2[illegible]	[illegible]			1[illegible]
Houston, [illegible]—Harris							
Autry Memorial Hosp School	Unit of Houston Tuberculosis Hospital						
Dr Greenwood's Sanitarium	N&M	Corp	40				1[illegible]
Heights Hospital	Gen	Corp	48	[illegible]	14	[illegible]	2,[illegible]
Hermann Hospital★+▲○	Gen	NPAssn	274	214	[illegible]	[illegible]	[illegible]

Key to symbols and abbreviations is on page 1091

TEXAS—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Houston Eye, Ear and Throat Hospital	ENT	NPAssn	23	12	..	...	1,877
Houston Negro Hospital	Gen	NPAssn	63	40	16	919	2,742
Houston Tuberculosis Hosp.	TB	CyCo	174	144	..	...	222
Jefferson Davis Hospital★+▲○	Gen	CyCo	441	317	52	1,170	10,090
Memorial Hospital▲○	Gen	Church	280	260	35	1,958	10,314
Methodist Hospital★+▲○	Gen	Church	137	117	22	678	4,660
Montrose Hospital Clinic	N&M	Indiv	35	25	..	...	500
Park View Hospital	Gen	Corp	35	14	6	243	1,092
St. Joseph's Infirmary+▲○	Gen	Church	377	372	95	4,836	22,054
Southern Pacific Hospital+▲	Indus	NPAssn	120	84	..	...	2,436
Turner Urological Institute	Urol	Indiv	18	15	..	...	710
Wright Clinic and Hospital▲	Gen	Indiv	31	21	6	111	1,127
Jacksboro, 2,368—Jack							
Jacksboro Hospital	Gen	Part	14	11	6	94	754
Jacksonville, 7,213, Cherokee							
Nan Travis Memorial Hosp.▲	Gen	NPAssn	86	61	15	375	3,048
Jasper, 3,497—Jasper							
Hardy-Hancock Hospital	Gen	Part	24	No data supplied			
Richardson Hospital	Gen	Indiv	22	14	10	175	876
Kenedy, 2,891—Karnes							
Kenedy Clinic and Hospital	Gen	Corp	20	8	4	62	603
Kermit, 2,584—Winkler							
Robinson-McClure Hospital	Gen	Part	16	5	5	190	830
Kerrville, 5,572—Kerr							
Kerrville General Hospital	Gen	NPAssn	20	9	6	118	642
Kerrville State Sanatorium	TB	State	185	152	..	...	271
Sunnyside Sanatorium	TB	Indiv	20	17	..	...	57
Kilgore, 6,708—Gregg							
Kilgore Memorial Hospital	Gen	NPAssn	21	14	7	240	1,075
Kingsville, 7,782—Kleberg							
Kleberg County Hospital	Gen	County	50	30	12	324	1,793
U. S. Naval Air Station Dispensary	Gen	Navy	75	37	6	62	2,005
Knox City, 1,127—Knox							
Knox County Hospital	Gen	County	29	22	8	240	1,380
La Grange, 2,531—Fayette							
La Grange Hospital	Gen	Corp	45	26	5	151	1,065
Lamesa, 6,038—Dawson							
Lamesa General Hospital	Gen	Indiv	22	14	9	312	1,001
Price Hospital	Gen	Indiv	17	10	8	130	493
Lampasas, 3,426—Lampasas							
Rollins-Brook Hospital	Gen	Part	21	15	6	164	1,322
Laredo, 39,274—Webb							
City-County Tuberculosis Hospital	TB	CyCo	25	20	..	...	44
Mercy Hospital	Gen	Church	80	38	24	873	2,947
La Tuna, 200—El Paso							
Federal Correctional Institution	Inst	USPHS	23	14	..	...	495
Legion, 200—Kerr							
Veterans Admin Hospital▲	TB	Vet	409	366	..	...	1,048
Levelland, 3,091—Hockley							
Phillips-Dupre Hospital	Gen	Part	12	10	5	208	725
Liberty, 3,087—Liberty							
Mercy Hospital	Gen	Church	55	29	12	248	1,678
Littlefield, 3,817—Lamb							
Littlefield Hospital and Clinic	Gen	Part	25	6	5	127	438
Payne-Shotwell Hospital and Clinic	Gen	Part	22	16	10	182	1,746
Livingston, 1,851—Polk							
Livingston Hospital	Gen	Indiv	15	10	2	153	862
Lockhart, 5,018—Caldwell							
Lockhart Sanitarium	Gen	NPAssn	18	4	4	47	210
Longview, 13,758—Gregg							
Hurst Eye, Ear, Nose and Throat Hospital	ENT	NPAssn	25	5	..	...	996
Markham Hospital	Gen	NPAssn	25	15	10	243	963
Lubbock, 31,853—Lubbock							
Lubbock General Hospital▲○	Gen	Corp	85	78	15	385	4,954
St. Mary of the Plains Hosp.▲	Gen	Church	40	34	12	377	3,122
West Texas Hospital▲○	Gen	Corp	64	55	24	546	4,385
Lufkin, 9,567—Angelina							
Angelina County Hospital	Gen	County	60	45	16	560	1,700
Luling, 4,437—Caldwell							
Luling Hospital	Gen	Part	16	3	6	97	520
Marlin, 6,542—Falls							
Buie-Allen Hospital	Gen	Indiv	50	35	5	85	1,000
Buie Clinic and Marlin Sanitarium Bath House and Hilton Hotel	Unit of Buie-Allen Hospital						
Torbett Clinic and Hospital	Gen	Corp	52	34	7	136	1,580
Marshall, 18,410—Harrison							
Kahn Memorial Hospital	Gen	NPAssn	34	18	7	415	1,440
Texas and Pacific Railway Employees Hospital	Indus	NPAssn	105	56	..	...	2,205
McAllen, 11,877—Hidalgo							
McAllen Municipal Hospital	Gen	City	65	43	22	475	2,163
McKinney, 8,555—Collin							
McKinney City Hospital▲○	Gen	City	65	53	14	487	1,792
Memphis, 3,869—Hall							
Goodall Hospital	Gen	Indiv	16	8	5	121	883
Memphis Hospital	Gen	Indiv	15	No data supplied			
Mercedes, 7,624—Hidalgo							
Mercedes General Hospital	Gen	NPAssn	23	9	9	196	767
Meridian, 1,016—Bosque							
Holt Hospital and Clinic	Gen	Indiv	15	6	4	109	438
Mexia, 6,410—Limestone							
[illegible] Hospital	Gen	NPAssn	20	No data supplied			
[illegible]	Gen	Indiv	25	No data supplied			
Mineral Wells, 6,303—Palo Pinto							
Nazareth Hospital▲	Gen	Church	40	22	10	335	1,232
Mount Pleasant, 4,525—Titus							
Taylor Hospital and Clinic	Gen	Indiv	12	6	8	47	220
Nacogdoches, 7,538—Nacogdoches							
City Memorial Hospital	Gen	City	60	60	10	352	2,512
Navasota, 6,136—Grimes							
Brazos Valley Sanitarium	Gen	Corp	25	16	5	182	1,170
New Braunfels, 6,976—Comal							
New Braunfels Hospital	Gen	Indiv	20	18	5	180	665
New Gulf, —Wharton							
Texas Gulf Sulphur Company Hospital	Gen	NPAssn	20	7	5	60	375
Odessa, 9,573—Ector							
Headlee Hospital	Gen	Indiv	25	11	10	180	1,010
Wood Hospital	Gen	Part	13	10	6	186	733
Olney, 3,497—Young							
Hamilton Hospital	Gen	City	19	16	6	152	739
Orange, 7,472—Orange							
Frances Ann Lutcher Hosp.	Gen	Corp	45	49	8	594	3,210
Orange City Hospital	Gen	City	72	34	18	442	2,900
Overton, 2,313—Rusk							
Rocky Mount Hospital	Ven	State	120	...	..	Estab. 1945	
Paducah, 2,677—Cottle							
W. Q. Richards Memorial Hospital	Gen	Indiv	20	8	4	154	658
Palestine, 12,144—Anderson							
Missouri Pacific Lines Employees' Hospital	Indus	NPAssn	75	37	..	...	1,200
Palestine Sanitarium	Gen	Corp	25	20	8	307	1,172
Pampa, 12,895—Gray							
Worley Hospital	Gen	Indiv	44	24	11	330	2,219
Paris, 18,678—Lamar							
Geo. Griffiths Memorial Hospital for Children	Unit of Sanitarium of Paris						
Lamar County Hospital	Gen	County	50	16	7	66	612
St. Joseph's Hospital▲	Gen	Church	60	51	16	496	1,875
Sanitarium of Paris○	Gen	Corp	81	78	12	267	2,320
Pasadena, 3,436—Harris							
Pasadena Hospital and Clinic	Gen	Part	37	26	13	649	2,581
Pearsall, 3,164—Frio							
Dr. J. E. Beall Hospital	Gen	Indiv	10	No data supplied			
Goodnight Clinic Hospital	Gen	Indiv	11	5	2	88	426
Pecos, 4,855—Reeves							
Camp and Camp Hospital	Gen	Indiv	17	8	8	147	541
Phillips, 4,000—Hutchinson							
Pantex Hospital	Gen	NPAssn	20	7	8	63	577
Pittsburg, 2,916—Camp							
Pittsburg Medical and Surgical Hospital	Gen	NPAssn	26	15	6	189	1,020
Plainview, 8,263—Hale							
Plainview Sanitarium and Clinic	Gen	Part	86	No data supplied			
Port Arthur, 46,140—Jefferson							
St. Mary's Hospital, Gates [illegible]	Gen	Church	175	95	30	1,229	5,816
Pra[illegible] 40—Waller							
P[illegible] Hospital○	Gen	State	52	31	4	26	797
Quanah, 3,767—Hardeman							
Memorial Hospital	Gen	County	50	28	10	230	2,309
Ranger, 4,553—Eastland							
Ranger General Hospital	Gen	CyCo	32	20	6	150	900
West Texas Hospital	Gen	Corp	18	11	4	89	496
Refugio, 4,077—Refugio							
Refugio County Hospital	Gen	Church	33	12	6	139	889
Robstown, 6,780—Nueces							
Robstown Hospital	Gen	NPAssn	14	No data supplied			
Roscoe, 1,166—Nolan							
Young Hospital	Gen	Part	23	21	7	141	1,606
Rosenberg, 3,457—Fort Bend							
Fort Bend Hospital	Gen	Part	41	No data supplied			
Rotan, 2,029—Fisher							
Callan Hospital	Gen	Part	30	19	6	203	1,387
Rusk, 5,699—Cherokee							
Rusk State Hospital▲	Ment	State	2,460	2,323	..	...	593
San Angelo, 25,802—Tom Green							
Clinic-Hospital▲	Gen	Corp	40	32	12	318	2,335
St. John's Hospital▲	Gen	Church	32	32	9	276	1,608
Shannon West Texas Memorial Hospital▲○	Gen	NPAssn	100	93	15	613	5,233
San Antonio, 253,854—Bexar							
Brooke General Hospital★+▲	Gen	Army	1,200	656	23	352	11,250
Central Clinic Hospital	Gen	Indiv	10	5	4	75	245
Grace Lutheran Sanatorium	TB	Church	36	35	..	...	115
Medical and Surgical Memorial Hospital★▲○	Gen	NPAssn	215	195	30	1,111	8,453
Medical Arts Hospital	Gen	Corp	30	22	5	3	1,768
Dr. Moody's Sanitarium	N&M	Corp	50	30	..	...	100
Nix Hospital★	Gen	Corp	145	138	36	754	4,968
Riverview Hospital	Ven	State	120	112	..	...	5,531
Robert B. Green Memorial Hospital★▲○	Gen	County	225	114	20	896	3,602
Saenz Clinic	Gen	Indiv	10	6	6	85	252
San Antonio State Hospital	Ment	State	2,757	2,732	..	...	605
Santa Rosa Hospital★▲○	Gen	Church	255	235	50	2,205	12,427
Station Hosp. (Brooks Field)	Gen	Army	25	11	..	...	946
Woodmen of the World Memorial Hospital+▲	TB	NPAssn	150	70	..	...	120
[illegible] 1,475—Tom Green							
[illegible]nat.▲	TB	State	955	707	..	...	1,465
[illegible]	Gen	NPAssn	23	...	8	...	...

Key to symbols and abbreviations is on page 1091

TEXAS—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Santa Anna, 1,661—Coleman							
Sealy Hospital▲	Gen	Part	15	8	3	59	472
Sealy, 2,500—Austin							
Sealy Hospital	Gen	Part	10	5	3	77	390
Seguin, 7,006—Guadalupe							
Seguin Hospital	Gen	Corp	22	10	6	132	600
Seminole, 1,761—Gaines							
Gaines County General Hosp.	Gen	Indiv	15	7	6	50	400
Seymour, 3,328—Baylor							
Baylor County Hospital	Gen	County	22	16	5	148	835
Shamrock, 3,123—Wheeler							
St. Mary's Hospital	Gen	Church	21	11	7	133	809
Shamrock General Hospital	Gen	Indiv	25	No data supplied			
Sherman, 17,156—Grayson							
St. Vincent's Hospital▲	Gen	Church	70	56	10	374	2,884
Wilson N. Jones Hospital▲◇	Gen	NPAssn	72	56	13	283	3,033
Shiner, 1,520—Lavaca							
Dr. Wagner's Hospital	Gen	Indiv	18	13	5	143	775
Sinton, 3,770—San Patricio							
Sinton Hospital	Gen	Corp	26	18	8	100	1,239
Slaton, 3,587—Lubbock							
Mercy Hospital	Gen	Church	50	8	10	200	1,800
Snyder, 3,815—Scurry							
Snyder General Hospital	Gen	Corp	25	11	9	136	794
Spur, 2,136—Dickens							
Nichols General Hospital	*Gen*	*Indiv*	*20*	*12*	*7*	*32*	*465*
Stamford, 4,810—Jones							
Stamford Sanitarium	Gen	Part	50	37	10	357	1,992
Stephenville, 4,768—Erath							
Stephenville Hospital and Clinic	Gen	NPAssn	53	50	7	238	2,047
Sugar Land, 2,400—Fort Bend							
Laura Eldridge Hospital	Gen	NPAssn	30	19	4	206	1,238
Taylor, 7,875—Williamson							
Stromberg Clinic and Hosp.	Gen	Corp	31	23	8	147	874
Wedemeyer Hospital	Gen	Corp	36	23	12	161	1,435
Teague, 3,157—Freestone							
Davidson Memorial Hospital	Gen	Indiv	20	5	5	114	605
Temple, 15,344—Bell							
Gulf, Colorado and Santa Fe Hospital▲	Indus	NPAssn	150	44	..	...	2,018
Kings Daughters Hospital★▲◇	Gen	NPAssn	110	66	16	267	3,096
Scott and White Hosp.★+▲◇	Gen	Corp	253	168	18	221	5,889
Terrell, 10,481—Kaufman							
Alexander Hospital	Gen	Indiv	25	14	4	101	1,192
Friddell Hospital	Gen	Indiv	14	5	6	60	497
Holton-Johnston Hospital	Gen	Part	15	8	5	110	786
Lane Clinic-Hospital	Gen	Indiv	10	4	3	34	193
Terrell State Hospital	Ment	State	2,794	2,650	..	...	587
Texarkana, 17,019—Bowie							
Federal Correctional Institution	Inst	USPHS	34	14	..	...	350
Texarkana Hospital▲	Gen	NPAssn	52	41	8	378	2,744
Texas City, 5,748—Galveston							
Beeler-Manske Clinic Hospital	Gen	Part	13	7	6	240	550
Danforth Clinic Hospital	Gen	Indiv	8	6	5	129	350
Tyler, 28,279—Smith							
Bryant Clinic and Sanit.	Gen	Part	17	16	6	197	1,369
Mother Frances Hospital▲	Gen	Church	65	40	18	609	2,339
Uvalde, 6,679—Uvalde							
Merritt Hospital	Gen	Indiv	13	2	5	125	...
Velasco, 1,000—Brazoria							
Dow Magnesium Corporation Hospital	Gen	NPAssn	52	34	12	238	2,323
Vernon, 9,277—Wilbarger							
Christ the King Hospital	Gen	Church	20	12	5	144	734
Moore Hospital and Clinic	Gen	Part	14	10	4	60	496
Vernon Hospital	Gen	Indiv	24	16	8	295	1,103
Victoria, 11,566—Victoria							
DeTar Memorial Hospital	Gen	Indiv	38	27	11	465	1,950
Victoria Hospital	Gen	Indiv	26	19	13	239	1,470
Waco, 55,982—McLennan							
Hillcrest Memorial Hosp.▲◇	Gen	Church	111	91	27	782	4,902
Providence Hospital▲◇	Gen	Church	150	133	25	844	5,467
Veterans Admin. Hospital▲	Ment	Vet	2,214	1,473	..	...	1,375
Waxahachie, 8,655—Ellis							
Waxahachie Sanitarium▲	Gen	NPAssn	34	11	5	287	1,230
[illegible]							
	Gen	Indiv	15	15	7	220	648
	Gen	Church	20	15	6	178	1,112
Wharton, 4,386—Wharton							
Caney Valley Hospital	Gen	Corp	40	5	12	189	922
Rugeley and Blasingame Clinic-Hospital	Gen	Part	35	24	6	128	1,888
Wheeler, 848—Wheeler							
Wheeler Hospital	Gen	Part	24	5	6	141	803
Wichita Falls, 45,112—Wichita							
Bethania Hospital▲	Gen	Church	52	40	16	474	2,027
Wichita Falls Clinic Hosp.★▲	Gen	Part	80	77	10	350	4,005
Wichita Falls State Hospital	Ment	State	2,479	2,355	..	...	650
Wichita General Hospital▲◇	Gen	CyCo	135	85	18	702	3,830
Yoakum, 4,733—Lavaca							
Huth Memorial Hospital	Gen	Church	30	24	5	150	1,055

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Arlington, 4,240—Tarrant							
Knights Templar Hospital	Inst	NPAssn	25	15	..	...	153
Austin, 87,930—Travis							
Austin State School	MeDe	State	2,001	1,850	..	...	158
Dallas, 294,734—Dallas							
Good Samaritan Hospital	Gen	Part	30	No data supplied			
Ennis, 7,087—Ellis							
Ennis Municipal Hospital	Gen	City	23	5	5	191	753
Fort Worth, 177,662—Tarrant							
Elmwood Sanatorium	TB	CyCo	68	51	..	...	60
Harrison Clinic and Hospital	Gen	Indiv	40	29	6	126	1,520
Howard Sanitarium	N&M	Indiv	16	11	..	...	70
Hallettsville, 1,581—Lavaca							
Dufner Hospital	Gen	Indiv	7	4	2	28	100
Hondo, 2,500—Medina							
Medina Hospital	Gen	Part	12	4	4	137	565
Houston, 384,514—Harris							
Home Hospital	Gen	Indiv	24	18	2	...	519
Huntsville, 5,108—Walker							
Texas State Prison Hospital	Inst	State	200	130	..	...	1,300
Hutchins, 400—Dallas							
City-County Convalescent Hospital	Conv	CyCo	125	120	..	...	82
McCamey, 2,595—Upton							
Cooper Hospital	Gen	Indiv	8	4	4	120	276
Mount Vernon, 1,443—Franklin							
Crutcher Hospital	Gen	NPAssn	10	3	3	68	72
Poteet, 2,315—Atascosa							
Shotts Memorial Hospital	Gen	Indiv	7	No data supplied			
Rosebud Hospital and Clinic	Gen	Indiv	16	2	3	69	447
San Antonio, 253,854—Bexar							
Salvation Army Home and Hospital	Mat	Church	35	19	18	52	101
Southton, 89—Bexar							
Bexar County Tuberculosis Hospital	TB	County	75	No data supplied			
Texon, 1,200—Reagan							
Texon Hospital	Gen	NPAssn	7	5	4	12	109
Waco, 55,982—McLennan							
Waco State Home Hospital	Inst	State	30	15	..	...	896

UTAH

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
American Fork, 3,333—Utah							
American Fork Community Hospital	Gen	City	22	13	15	296	700
Bingham Canyon, 2,834—Salt Lake							
Bingham Canyon Hospital▲	Gen	Indiv	40	27	8	86	825
Brigham, 5,641—Box Elder							
Cooley Memorial Hospital	Gen	Part	35	23	15	329	1,185
Cedar City, 4,695—Iron							
Iron County Hospital	Gen	County	40	30	18	359	1,200
Coalville, 949—Summit							
Summit County Hospital	Gen	County	14	9	7	144	302
Fort Douglas, 1,071—Salt Lake							
Station Hospital	Gen	Army	70	54	..	...	891
Fort Duchesne, 104—Uintah							
Uintah and Ouray Agency Indian Hospital	Gen	IA	24	17	7	58	370
Heber, 2,748—Wasatch							
Heber Hospital	Gen	Part	14	9	10	145	334
Lehi, 2,733—Utah							
Lehi Municipal Hospital	Gen	City	14	9	5	180	307
Logan, 11,868—Cache							
Cache Valley General Hosp.	Gen	NPAssn	42	12	18	377	1,310
William Budge Memorial Hospital▲◇	Gen	NPAssn	75	70	22	506	3,169
Moab, 1,084—Grand							
Grand County Public Hosp.	Gen	County	18	9	8	90	345
Ogden, 43,688—Weber							
Thomas D. Dee Memorial Hospital★▲◇	Gen	Church	320	198	80	2,147	9,611
Utah State Tuberculosis Sanatorium▲	TB	State	100	65	..	...	77
Park City, 3,739—Summit							
Park City Miners' Hospital	Gen	NPAssn	30	11	6	40	409
Payson, 3,591—Utah							
Payson City Hospital	Gen	City	32	25	18	401	1,138
Price, 5,214—Carbon							
Price City Hospital	Gen	City	40	34	12	458	1,329
Provo, 18,071—Utah							
Utah State Hospital	Ment	State	1,200	1,139	..	...	420
Utah Valley Hospital▲	Gen	NPAssn	55	44	28	705	2,224
Richfield, 3,584—Sevier							
Sevier Valley Hospital	Gen	Indiv	20	13	8	202	551
St. George, 3,591—Washington							
D. A. McGregor Hospital	Gen	NPAssn	25	8	5	157	417
Salina, 1,616—Sevier							
Salina Hospital	Gen	City	17	8	8	184	362
Salt Lake City, 149,934—Salt Lake							
Dr. W. H. Groves' Latter-Day Saints Hospital★+▲◇	Gen	Church	350	290	60	2,888	13,692
Holy Cross Hospital★▲◇	Gen	Church	200	169	60	1,607	5,942
Primary Children's Hospital	Chil	Church	25	18	..	...	61
St. Mark's Hospital★▲◇	Gen	Church	217	175	28	617	5,121
Salt Lake County General Hospital★+▲◇	Gen	County	310	190	30	270	3,223
Shriners Hospital for Crippled Children	Orth	NPAssn	20	20	..	...	31
Utah Intensive Treatment Center	Ven	State	50	...	..	Estab. 1945	
Veterans Admin. Center▲	Gen	Vet	204	147	..	...	1,558
Spanish Fork, 4,167—Utah							
Hughes Memorial Hospital	Gen	Indiv	16	7	7	145	340
Tremonton, 1,443—Box Elder							
Valley Hospital	Gen	NPAssn	20	9	12	150	699

UTAH—Continued

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
American Fork, 3,333—Utah							
Utah State Training School	MeDe	State	679	613	..	...	87
Murray, 5,740—Salt Lake							
Cottonwood Stake Maternity Hospital	Mat	Church	23	18	23	749	778

VERMONT

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Barre, 10,909—Washington							
Barre City Hospital▲○	Gen	NPAssn	64	46	17	377	1,800
Washington County Sanat.	TB	State	47	36	..	..	58
Bellows Falls, 4,236—Windham							
Rockingham General Hospital	Gen	NPAssn	42	33	10	215	1,042
Bennington, 7,628—Bennington							
Henry W. Putnam Memorial Hospital▲	Gen	NPAssn	96	61	20	331	1,721
Brattleboro, 9,622—Windham							
Brattleboro Memorial Hosp ▲	Gen	NPAssn	75	48	20	290	1,804
Brattleboro Retreat	Ment	NPAssn	800	718	..	...	219
Burlington, 27,686—Chittenden							
Bishop *De* Goesbriand Hospital*+▲○	Gen	Church	115	120	25	438	3,953
*Mary Fletcher Hospital**+▲○	Gen	NPAssn	193	158	37	680	5,563
Hardwick, 1,607—Caledonia							
Hardwick Hospital	Gen	NPAssn	16	11	6	82	245
Middlebury, 2,123—Addison							
Porter Memorial Hospital▲	Gen	NPAssn	45	20	10	184	1,109
Montpelier, 8,006—Washington							
Heaton Hospital▲○	Gen	NPAssn	70	50	12	234	2,781
Morrisville, 1,967—Lamoille							
Copley Hospital	Gen	NPAssn	31	15	5	77	507
Newport, 4,902—*Orleans*							
Orleans County Memorial Hospital▲	Gen	NPAssn	40	25	10	213	1,123
Pittsford, 576—Rutland							
Vermont Sanatorium	TB	State	84	64	..	...	104
Proctor, 2,184—Rutland							
Proctor Hospital	Gen	NPAssn	35	19	7	78	531
Randolph, 1,988—Orange							
Gifford Memorial Hospital▲○	Gen	NPAssn	55	42	10	156	1,107
Rutland, 17,082—Rutland							
Rutland Hospital▲○	Gen	NPAssn	140	132	20	613	3,895
St. Albans, 8,037—Franklin							
St. Albans Hospital▲○	Gen	NPAssn	50	48	8	295	1,974
St. Johnsbury, 7,437—Caledonia							
Brightlook Hospital▲○	Gen	NPAssn	55	43	12	160	1,271
St. Johnsbury Hospital	Gen	Church	30	20	10	95	625
Springfield, 5,182—Windsor							
Springfield Hospital▲	Gen	NPAssn	47	42	15	333	1,592
Waterbury, 3,074—Washington							
Vermont State Hospital	Ment	State	1,090	1,070	..	..	335
White River Junction, 2,271—*Windsor*							
Veterans Admin. Center▲	Gen	Vet	188	134	..	...	1,556
Windsor, 3,402—*Windsor*							
Windsor Hospital	Gen	NPAssn	15	7	8	130	419
Winooski, 6,036—Chittenden							
Fanny Allen Hospital▲○	Gen	Church	75	76	12	191	1,604

Related Institutions

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
[illegible]							
[illegible]	MeDe	State	400	394	..	...	21
Caverly Preventorium	TB	NPAssn	44	28	..	...	50
Windsor, 3,402—Windsor							
Vermont State Prison Hosp	Inst	State	12	4	..	...	87

VIRGINIA

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Abingdon, 3,158—*Washington*							
George Ben Johnston Memorial Hospital○	Gen	NPAssn	65	64	5	110	2,336
[illegible]							
[illegible] *+▲	Gen	NPAssn	165	123	60	1,293	5,184
Arlington, 57,040—Arlington							
Arlington Hospital▲	Gen	NPAssn	115	72	26	645	3,224
Bedford, 3,973—Bedford							
John Russell Hospital	Gen	Corp	21	18	7	163	902
Bristol, 9,768—Washington							
Kings Mountain Memorial Hospital▲	Gen	NPAssn	47	42	10	443	2,098
Brook Hill, 100—Henrico							
Pine Camp Hospital	See Richmond, Virginia						
Burkeville, 658—Nottoway							
[illegible]	TB	State	269	237	..	...	231
[illegible]	B	State	400	[illegible]	..	...	[illegible]
[illegible]	B	State	370	308	..	...	387
Martha Jefferson Hospital and Sanitarium▲	Gen	NPAssn	50	38	10	208	1,725

VIRGINIA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
University of Virginia Hospital*+▲○	Gen	State	490	402	50	1,102	12,235
Christiansburg, 2,299—*Montgomery*							
New Altamont Hospital▲	Gen	Corp	26	19	8	373	1,386
Clifton Forge, 6,461—Alleghany							
Chesapeake and Ohio Hospital*+▲○	Gen	NPAssn	142	106	10	211	4,920
Clintwood, 1,106—*Dickenson*							
Dickenson County Hospital	Gen	Indiv	20	13	8	137	815
Coeburn, 764—Wise							
Coeburn Hospital	Gen	Part	25	15	4	136	701
Covington, 6,300—*Alleghany*							
Covington General Hospital	Gen	Indiv	27	18	10	166	803
Dante, 2,700—Russell							
Clinchfield Hospital	Gen	NPAssn	25	21	2	6	750
Danville, 32,749—*Pittsylvania*							
Hilltop Sanatorium	TB	NPAssn	60	35	..	..	90
Memorial Hospital▲○	Gen	NPAssn	170	133	24	923	6,819
Farmville, 3,475—Prince Edward							
Southside Community Hosp ▲	Gen	NPAssn	55	38	16	387	1,930
Fort Belvoir, —Fairfax							
Regional Station Hospital	Gen	Army	50	31	..	...	1,177
Fort Monroe, 1,265—Elizabeth City							
Station Hospital▲	Gen	Army	136	67	4	43	2,103
Fort Myer, 1,050—Arlington							
Station *Hospital*	Gen	Army	139	61	..	...	1,030
Franklin, 3,466—*Southampton*							
Raiford Memorial Hospital▲	Gen	NPAssn	56	33	15	135	1,379
Fredericksburg, 10,066—*Spotsylvania*							
Mary Washington Hospital	Gen	NPAssn	85	61	10	515	2,688
Front Royal, 3,831—Warren							
Front Royal Community Hospital	Gen	NPAssn	21	17	5	91	1,068
Gordonsville, 508—Orange							
Gordonsville Community *Hospital*	Gen	Part	14	3	4	18	79
Grundy, 1,476—Buchanan							
Grundy Hospital	Gen	Corp	60	45	8	94	2,084
Hampton, 5,898—*Elizabeth City*							
Dixie Hospital▲○	Gen	NPAssn	165	92	30	727	4,267
Harrisonburg, 8,768—Rockingham							
Rockingham Memorial Hosp ○	Gen	NPAssn	152	127	26	748	6,324
Hopewell, 8,679—*Prince George*							
John Randolph Hospital	Gen	NPAssn	20	13	6	198	614
Hot Springs, 1,000—Bath							
Community House	Gen	NPAssn	14	12	4	41	241
Kecoughtan, 1,900—Elizabeth City							
Veterans Admin Hospital▲	Gen	Vet	532	391	..	...	3,440
Langley Field, —Elizabeth City							
Regional Hospital+▲	Gen	Army	125	61	5	99	2,690
Lebanon, 622—Russell							
Lebanon General Hospital	Gen	Indiv	25	19	8	130	1,025
Lee Hall, —Warwick							
U. S. Naval Hospital*▲	Gen	Navy	1,719	1,219	12	125	8,768
Leesburg, 1,698—Loudoun							
Loudoun County Hospital	Gen	County	32	17	7	179	906
Lexington, 3,914—Rockridge							
Stonewall Jackson Memorial Hospital	Gen	NPAssn	57	39	8	237	1,868
Lorton, 70—Fairfax							
District of Columbia Reformatory	See Washington, D. C.						
Louisa, 363—Louisa							
Louisa Hospital	Gen	Indiv	10	5	7	152	200
Luray, 1,511—Page							
Page Memorial Hospital	Gen	NPAssn	30	10	10	86	771
Lynchburg, 44,541—Campbell							
Guggenheimer Maternity Hospital	Unit of Marshall Lodge Memorial Hosp.						
Lynchburg General Hosp ▲○	Gen	City	145	105	24	585	4,009
Marshall Lodge Memorial Hospital▲	Gen	NPAssn	135	80	30	375	[illegible]
Virginia Baptist Hospital▲○	Gen	Church	100	90	25	[illegible]	2,774
Marion, 5,177—Smyth							
Lee Memorial Hospital	Gen	NPAssn	84	74	18	258	2,738
Southwestern State Hosp.▲	Ment	State	[illegible]	1,297	..	...	322
Martinsville, 10,080—Henry							
Henry County Memorial Hospital	Gen	Indiv	25	18	7	59	[illegible]
Shackelford Hospital▲	Gen	Indiv	50	46	12	376	1,979
Nassawadox, 250—Northampton							
Northampton Accomac Memorial Hospital○	Gen	NPAssn	70	40	12	280	1,725
Newport News, 37,067—Warwick							
Elizabeth Buxton Hosp +▲○	Gen	Indiv	140	133	25	604	6,947
Riverside Hospital+▲○	Gen	NPAssn	180	100	35	1,251	5,231
Whittaker Memorial Hosp ▲	Gen	NPAssn	57	47	20	533	[illegible]
Norfolk, 144,332—Norfolk							
De Paul Hospital*▲○	Gen	Church	255	225	48	1,514	9,210
Grandy Sanatorium	TB	City	150	106	..	...	129
Hampton Roads Medical Center	Ven	USPHS	143	106	11	..	[illegible]
Leigh Memorial Hospital▲	Gen	NPAssn	150	72	22	615	3,216
McCoy Stokes Hospital	FNT	Part	11	3			[illegible]
Norfolk Community Hosp ▲	Gen	NPAssn	143	91	[illegible]	[illegible]	[illegible]
Norfolk General Hosp*+▲○	Gen	NPAssn	342	239	55	1,507	[illegible]
U. S. Marine Hospital*▲	Gen	USPHS	420	367	..	...	7,157
U. S. Naval Air Station Dispensary	Gen	Navy	420	210	..	...	8,715
U. S. Naval Hospital*+▲	Gen	Navy	1,600	1,457	37	[illegible]	[illegible]

Key to symbols and abbreviations is on page 1091

VIRGINIA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Norton, 4,006—Wise							
Dr. Botts' Eye, Ear, Nose and Throat Hospital	ENT	Indiv	38	14	..	...	678
Norton Clinic Hospital	Gen	Indiv	50	19	5	32	1,102
Norton General Hospital	Gen	Indiv	40	23	10	156	979
Pennington Gap, 1,990—Lee							
Lee General Hospital	Gen	Corp	35	26	6	107	1,282
Petersburg, 30,631—Dinwiddie							
Central State Hospital▲	Ment	State	3,374	3,883	..	...	875
Federal Reformatory Hosp.	Inst	USPHS	76	23	..	...	894
Medical Center Hospital	Unit of Central State Hospital						
Petersburg Hospital▲◇	Gen	NPAssn	100	105	15	590	5,238
Petersburg State Colony	MeDe	State	300	222	..	...	57
Portsmouth, 50,745—Norfolk							
Kings Daughters Hospital▲◇	Gen	NPAssn	202	139	38	1,214	7,881
U. S. Naval Hospital★+▲	Gen	Navy	3,441	3,839	33	653	19,585
Pulaski, 8,792—Pulaski							
Pulaski Hospital▲	Gen	Corp	75	66	15	446	2,876
Quantico, 1,139—Prince William							
U. S. Naval Hospital★▲	Gen	Navy	635	497	..	...	3,869
Radford, 6,990—Montgomery							
Radford Community Hosp.▲◇	Gen	NPAssn	68	51	15	470	2,992
St. Albans Sanatorium	N&M	Indiv	46	49	..	...	735
[illegible]	Gen	Corp	101	65	10	279	3,825
[illegible]	Gen	Part	75	38	8	79	1,304
Richmond, 193,042—Henrico							
Crippled Children's Hosp.+▲	Orth	NPAssn	120	87	..	...	280
Dooley Hospital	Unit of Med. Coll. of Va., Hosp. Division						
Grace Hospital+▲◇	Gen	Corp	90	76	20	497	4,026
Johnston-Willis Hospital★+▲◇	Gen	Corp	132	124	22	745	4,936
Medical College of Virginia, Hospital Division★+▲◇	Gen	State	717	534	94	1,998	12,725
Memorial Hospital	Unit of Med. Coll. of Va., Hosp. Division						
Penitentiary Hospital	Inst	State	44	31	..	...	989
Pine Camp Hospital	TB	City	230	162	..	...	192
Retreat for the Sick+▲	Gen	NPAssn	95	87	25	828	3,895
Richmond Community Hosp.	Gen	NPAssn	24	21	6	190	730
Richmond Municipal Hospital	Ven	City	80	50	..	...	2,354
St. Elizabeth's Hospital+▲◇	Gen	Corp	55	53	..	...	1,618
St. Luke's Hospital+▲◇	Gen	Corp	83	79	20	492	2,810
St. Philip Hospital◇	Unit of Med. Coll. of Va., Hosp. Division						
Sheltering Arms Hospital+▲	Gen	NPAssn	86	43	17	325	1,040
Stuart Circle Hospital★▲◇	Gen	Corp	103	102	23	490	3,363
Tucker Hospital▲	N&M	Corp	30	No data supplied			
Veterans Admin. Hospital▲	Gen	Vet	2,585	...	..	Estab. 1946	
Westbrook Sanatorium	N&M	Corp	135	132	..	...	368
Roanoke, 69,287—Roanoke							
Burrell Memorial Hospital▲	Gen	NPAssn	44	33	4	220	1,279
Gill Memorial Eye, Ear and Throat Hospital+▲	ENT	NPAssn	25	9	..	...	1,296
Jefferson Hospital★+▲◇	Gen	NPAssn	150	122	30	736	4,239
Lewis-Gale Hospital★▲◇	Gen	NPAssn	172	130	22	569	4,688
Roanoke City Sanatorium▲	TB	City	69	30	..	...	44
Roanoke Hospital▲◇	Gen	NPAssn	112	97	13	435	3,030
Shenandoah Hospital▲	Gen	Corp	60	40	8	320	2,131
Veterans Admin. Hospital▲	Ment	Vet	1,697	1,529	..	...	2,231
Saltville, 2,650—Smyth							
Mathieson Hospital	Gen	NPAssn	17	8	5	63	494
South Boston, 5,252—Halifax							
South Boston Hospital	Gen	Corp	45	35	10	267	1,833
Staunton, 13,337—Augusta							
DeJarnette Sanatorium	Ment	State	245	209	..	...	683
Kings Daughters Hospital▲	Gen	NPAssn	73	47	16	353	1,903
Western State Hospital	Ment	State	2,538	2,385	..	...	795
Stonega, 1,650—Wise							
Stonega Hospital	Indus	NPAssn	18	4	..	...	107
Stuart, 720—Patrick							
Stuart Hospital	Gen	Indiv	20	12	5	71	407
Suffolk, 11,343—Nansemond							
Lakeview Hospital▲◇	Gen	NPAssn	62	55	15	271	1,779
Virginia General Hospital	Gen	NPAssn	25	15	8	92	345
University, —Albemarle							
University of Virginia Hosp.	See Charlottesville, Virginia						
Waynesboro, 7,373—Augusta							
Waynesboro Community Hospital	Gen	NPAssn	32	20	9	219	1,034
Williamsburg, 3,942—James City							
Bell Hospital	Gen	Indiv	19	6	5	96	406
Eastern State Hospital▲	Ment	State	1,746	1,814	..	...	583
Winchester, 12,095—Frederick							
Winchester Memorial Hosp.▲◇	Gen	NPAssn	160	127	27	661	5,047
Woodstock, 1,546—Shenandoah							
Cora Miller Memorial Hosp.	Gen	Indiv	33	17	8	139	533
Related Institutions							
Beaumont, —Powhatan							
Virginia Industrial School for Boys	Inst	State	21	4	..	...	287
Colony, 100—Amherst							
Lynchburg State Colony▲	MeDe	State	1,723	1,653	..	...	258
Medical Center Hospital▲	Unit of Lynchburg State Colony						
Lawrenceville, 1,703—Brunswick							
Louile Taylor Letcher Memorial Hospital	Inst	Church	18	2	..	...	150
Martinsville, 10,080—Henry							
St. Mary Hospital	Gen	Indiv	12	9	2	100	268
Richmond, 193,042—Henrico							
City Home	GenInst	City	500	391	20	51	1,208
State Farm, 75—Goochland							
State Farm Hospital	Inst	State	120	82	..	...	444
Sweet Briar, 200—Amherst							
Sweet Briar College Infirmary	Inst	NPAssn	15	3	..	...	251

WASHINGTON

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Aberdeen, 18,846—Grays Harbor							
St. Joseph's Hospital▲	Gen	Church	88	82	25	798	...
American Lake, 800—Pierce							
Veterans Admin. Hospital▲	Ment	Vet	825	777	..	...	500
Anacortes, 5,875—Skagit							
Anacortes Hospital	Gen	Corp	25	15	6	169	572
Bellingham, 29,314—Whatcom							
St. Francis Hospital	Gen	Indiv	25	20	4	...	240
St. Joseph's Hospital▲◇	Gen	Church	112	106	18	640	3,512
St. Luke's General Hosp.▲◇	Gen	NPAssn	70	69	12	429	3,122
Whatcom County Hospital	GenInst	County	102	50	8	8	555
Bremerton, 15,134—Kitsap							
Harrison Memorial Hospital	Gen	NPAssn	125	96	40	1,343	4,801
Roosevelt Hospital	Gen	County	125	110	35	1,017	5,272
U. S. Naval Hospital★▲	Gen	Navy	1,189	882	17	519	10,630
Chehalis, 4,857—Lewis							
St. Helen Hospital▲	Gen	Church	40	30	13	847	1,262
Chewelah, 1,565—Stevens							
St. Joseph's Hospital	Gen	Church	37	22	11	112	961
Colfax, 2,853—Whitman							
St. Ignatius Hospital▲	Gen	Church	68	41	11	184	1,321
Colville, 2,418—Stevens							
Mount Carmel Hospital	Gen	Church	45	30	10	200	1,018
Coulee Dam, 3,100—Douglas							
Coulee Dam Community Hospital	Gen	Part	40	18	12	117	1,088
Dayton, 3,026—Columbia							
John Brining Memorial Hosp.	Gen	Indiv	22	18	4	79	571
Ellensburg, 5,944—Kittitas							
Ellensburg General Hospital▲	Gen	NPAssn	30	25	10	124	913
Kittitas County Hospital	Gen	County	40	44	5	28	1,020
Valley General Hospital	Gen	Part	19	13	6	204	724
Elma, 1,370—Grays Harbor							
Elma General Hospital	Gen	Part	33	16	6	96	487
Oakhurst Sanatorium	TB	County	110	77	..	...	65
Everett, 30,224—Snohomish							
General Hospital▲◇	Gen	NPAssn	90	83	29	834	3,641
Providence Hospital▲◇	Gen	Church	140	85	28	562	3,892
Fort Steilacoom, 2,080—Pierce							
Western State Hospital+▲⊙	Ment	State	3,178	2,841	..	...	1,011
Fort Worden (Port Townsend P. O.), —Jefferson							
Station Hospital	Gen	Army	45	12	2	10	171
Kirkland, 2,084—King							
Kirkland Hospital	Gen	Indiv	15	9	12	201	505
Lakeview, 200—Pierce							
Mountain View Sanatorium	TB	County	115	79	..	...	94
Longview, 12,385—Cowlitz							
Cowlitz General Hospital	Gen	NPAssn	70	78	20	477	3,759
St. John's Memorial Hospital	Gen	Church	60	30	12	274	1,688
Medical Lake, 2,114—Spokane							
Eastern State Hospital+▲⊙	Ment	State	2,249	2,087	..	...	551
Monroe, 1,590—Snohomish							
Valley View Hospital	GenInst	County	72	59	6	12	289
Mount Vernon, 4,278—Skagit							
Rowley General Hospital	Gen	Indiv	45	35	8	193	1,113
Skagit General Hospital	Gen	NPAssn	36	20	12	125	1,137
Nespelem, 300—Okanogan							
Colville Indian Hospital	Gen	IA	36	18	5	38	484
Newport, 1,174—Pend Oreille							
Newport Community Hospital	Gen	NPAssn	20	8	8	110	511
Oak Harbor, 376—Island							
U. S. Naval Air Station Dispensary	Gen	Navy	68	40	12	49	3,079
Olympia, 13,254—Thurston							
St. Peter's Hospital▲◇	Gen	Church	125	95	25	659	3,751
Pasco, 3,913—Franklin							
Our Lady of Lourdes Hosp.▲	Gen	Church	60	38	20	589	2,383
U. S. Naval Air Station Dispensary	Gen	Navy	156	5	..	...	300
Port Angeles, 9,409—Clallam							
Davidson and Hay Hospital	Gen	Indiv	30	32	12	195	1,385
Port Angeles General Hosp.▲	Gen	NPAssn	100	56	14	256	1,966
Port Gamble, 500—Kitsap							
Port Gamble General Hospital	Gen	Indiv	20	...	8	Reopened	
Port Townsend, 4,683—Jefferson							
St. John's Hospital	Gen	Church	118	42	12	233	971
Puyallup, 7,889—Pierce							
Puyallup General Hospital	Gen	Part	28	17	14	300	1,200
Renton, 4,488—King							
Bronson Memorial Hospital	Gen	Indiv	33	31	9	368	2,021
Renton Hospital	Gen	NPAssn	100	...	20	Estab. 1945	
Richland, 247—Benton							
Kadlec Hospital	Gen	NPAssn	115	52	22	479	3,062
Richmond Highlands, 600—King							
Firland Sanatorium▲⊙	TB	City	267	240	..	...	202
Seattle, 368,302—King							
Ballard General Hospital	Gen	NPAssn	34	26	12	123	1,272
Children's Orthopedic Hosp.+▲	Orth	NPAssn	125	102	..	...	1,376
Cobb Hospital	Surg	Indiv	26	17	..	...	3,210
Columbus Hospital★▲◇	Gen	Church	200	141	49	1,237	6,291
Doctors Hospital★	Gen	NPAssn	190	117	48	945	4,570
Firland Sanatorium	See Richmond Highlands, Wash.						
King County Hospital, Unit No. 1 (Harborview)★+▲◇	Gen	County	454	475	51	444	12,566
King County Hospital, Unit No. 2 (Georgetown)	Chr	County	275	268	..	...	232
King County Tuberculosis Hospital+▲	TB	County	216	156	..	...	152

Key to symbols and abbreviations is on page 1091

WASHINGTON—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Laurel Beach Sanatorium⊙...	TB	Part	95	90	..	...	163
Maynard Hospital+▲	Gen	NPAssn	100	84	50	1,763	3,650
Medical and Dental Building Surgery	Surg	Indiv	20	15	..	...	3,186
Providence Hospital★+▲○	Gen	Church	357	336	77	2,299	11,810
Riverton Hospital for Diseases of the Chest▲........	TB	NPAssn	90	91	..	...	86
Seattle General Hospital★▲...	Gen	NPAssn	110	107	20	840	4,105
Station Hospital	Gen	Army	20	2	..	...	175
Swedish Hospital★+▲○	Gen	NPAssn	300	280	74	2,592	9,771
U. S. Marine Hospital★▲.....	Gen	USPHS	400	393	14	285	7,078
U. S. Naval Air Station Dispensary	Gen	Navy	110	36	..	...	4,192
U. S. Naval Hospital★▲.......	Gen	Navy	2,286	2,144	60	3	18,681
University of Washington Health Service	Inst	State	75	7	..	...	774
Virginia Mason Hospital★+▲○	Gen	NPAssn	165	154	35	1,248	6,481
Washington Infirmary	Ven	State	80	34	..	...	1,250
Sedro Woolley, 2954—Skagit							
Memorial Hospital	Gen	NPAssn	45	33	14	200	1,248
Northern State Hospital+▲⊙..	*Ment*	*State*	*2,087*	*2,110*	..	...	*525*
Shelton, 3,707—Mason							
Shelton General Hospital▲...	Gen	NPAssn	54	34	12	197	1,573
Snohomish, 2,794—Snohomish							
Aldercrest Sanatorium	TB	County	53	42	..	...	64
Snohomish General Hospital..	Gen	Indiv	16	10	5	157	449
Snoqualmie Falls, —King							
Snoqualmie Falls Hospital...	Gen	Indiv	22	15	6	66	424
Spokane, 122,001—Spokane							
Deaconess Hospital★▲○	Gen	Church	200	188	44	1,342	7,795
Edgecliff Sanatorium	TB	County	142	101	..	...	181
Sacred Heart Hospital★▲○...	Gen	Church	350	340	60	1,816	11,090
St. Luke's Hospital★▲○......	Gen	NPAssn	255	179	25	542	6,423
Salvation *Army Home and* Hospital	Mat	Church	35	14	25	125	153
Shriners Hospital for Crippled Children+▲	Orth	NPAssn	24	20	..	...	81
Steilacoom, 832—Pierce							
U. S. Penitentiary Hospital▲..	Inst	USPHS	94	51	..	...	845
Tacoma, 109,408—Pierce							
Northern Pacific Beneficial *Association Hospital*▲	Gen	NPAssn	111	70	8	98	2,817
Pierce County Hospital★▲....	Gen	County	215	149	24	153	3,134
St. Joseph's Hospital★▲○.....	*Gen*	*Church*	*270*	*190*	*71*	*1,904*	*8,832*
Tacoma General Hosp.★+▲○..	Gen	NPAssn	*213*	*189*	*70*	*2,083*	*7,696*
Tacoma Indian Hospital▲....	GenTb	IA	337	282	19	...	1,471
Tonasket, 643—Okanogan							
St. Martin's Hospital.........	Gen	Church	35	30	6	161	914
Vancouver, 18,788—Clark							
Clark County Hospital......	*GenInst*	*County*	*78*	*50*	*6*	...	*972*
Northern Permanente Foundation★+▲	Gen	NPAssn	330	216	30	623	11,087
St. Joseph's Hospital▲○......	Gen	Church	*120*	*106*	*35*	*1,273*	*4,957*
Vancouver Memorial Hosp.▲..	Gen	NPAssn	150	68	21	429	3,267
Walla Walla, 18,109—Walla Walla							
St. Mary's Hospital▲○........	Gen	Church	93	85	15	574	3,583
Veterans Admin. Hospital▲...	TB	Vet	421	358	..	...	711
Walla *Walla General Hosp.*▲	*Gen*	Church	53	53	14	370	1,863
Wenatchee, 11,620—Chelan							
Central Washington Deaconess Hospital▲	Gen	Church	*50*	*44*	*20*	*366*	*1,767*
St. Anthony's Hospital▲○.....	Gen	Church	75	57	20	426	3,405
Yakima, 27,221—Yakima							
St. Elizabeth Hospital▲○.....	Gen	Church	170	161	30	1,456	7,470
Yakima County Hospital.....	Gen	County	99	62	7	57	1,213

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Cle Elum, 2,230—Kittitas							
Roslyn Cle Elum Beneficial Company Hospital	Gen	NPAssn	25	15	1	10	497
Ione, 681—Pend Oreille							
Ione Hospital	Gen	Indiv	11	1	5	38	235
Medical Lake, 2,114—Spokane							
Eastern State Custodial School	McDe	State	1,400	1,390	..	...	67
Seattle, 368,302—King							
[illegible] Sanitarium	Conv	Indiv	11	9	..	...	5
	Alcoh	Corp	32	14	..	...	644
	Iso	City	90	3	..	...	83
	Gen	NPAssn	21	17	..	...	2,555
White Shield Home..........	Mat	NPAssn	21	18	10	82	82
Walla Walla, 18,109—Walla Walla							
Blue Mountain Sanatorium...	*TB*	*County*	40	35	..	...	73
Washington State Penitentiary ..	Inst	State	66	40	..	...	308
..	Gen	Indiv	18	11	5	62	300
..	TB	Part	45	29	..	...	59

WEST VIRGINIA

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Alderson, 1,493—Monroe							
Federal Reformatory *for* Women	Inst	USPHS	53	27	8	26	1,079
Barboursville, 1,550—Cabell							
Barboursville Unit of Huntington State Hospital......	MeDe	State	312	301	..	...	37

WEST VIRGINIA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Beckley, 12,852—Raleigh							
Beckley Hospital+▲	Gen	Part	160	116	15	263	5,589
Pinecrest *Sanitarium*▲	TB	State	665	544	..	...	714
Raleigh General Hospital▲○..	Gen	Corp	100	79	15	256	2,713
Bluefield, 20,641—Mercer							
Bluefield *Sanitarium*▲	*Gen*	Corp	*165*	129	18	408	5,500
Brown's Hospital	Gen	Indiv	42	8	3	68	482
Providence Hospital	Gen	Indiv	25	12	3	23	465
St. Luke's Hospital○.........	Gen	Corp	65	50	10	189	2,284
Buckhannon, 4,450—Upshur							
St. *Joseph's Hospital*▲......	*Gen*	*Church*	*44*	*24*	*8*	*155*	*940*
Charleston, 67,914—Kanawha							
Charleston General Hospital★+▲○	*Gen*	NPAssn	300	222	35	1,013	9,625
Kanawha Valley Hospital★▲○	*Gen*	Corp	150	116	15	408	4,565
McMillan Hospital+▲○	*Gen*	*Corp*	*100*	*63*	*20*	*482*	*3,457*
Mountain State Memorial Hospital▲○	Gen	NPAssn	88	60	12	546	4,501
St. Francis Hospital+▲○.....	Gen	Church	130	122	30	903	5,699
Salvation Army Hospital....	Gen	Church	28	8	8	112	403
Staats Hospital	Gen	Corp	56	48	11	194	1,996
Charles Town, 2,926—Jefferson							
Charles Town General Hosp..	Gen	NPAssn	26	13	8	84	437
		Church	187	136	17	600	4,855
		NPAssn	54	45	14	530	2,041
Denmar, 100—Pocahontas							
Denmar Sanatorium	*TB*	State	125	114	..	...	125
East Rainelle, 1,515—Greenbrier							
East Rainelle General Hosp...	Gen	Corp	35	20	10	111	756
Elkins, 8,133—Randolph							
Davis Memorial Hospital▲○...	*Gen*	*NPAssn*	*95*	*72*	*8*	*67*	*2,515*
Elkins City Hospital▲○.......	Gen	Corp	*66*	*36*	*12*	*179*	*1,271*
Fairmont, 23,105—Marion							
Fairmont Emergency Hosp.▲○	Gen	State	*68*	*53*	*6*	*100*	*1,823*
Fairmont General Hospital▲○	Gen	City	*143*	*108*	*18*	*666*	*4,887*
Glen Dale, 1,348—Marshall							
Reynolds Memorial Hosp.▲○..	Gen	Church	80	48	10	389	2,197
Hinton, 5,815—Summers							
Hinton Hospital▲	*Gen*	*Corp*	*60*	*43*	*12*	*94*	*1,772*
Holden, 3,000—Logan							
Holden Hospital	Gen	Corp	35	20	2	11	913
Hopemont, 475—Preston							
Conley Hospital	Unit of Hopemont Sanitarium						
Hopemont Sanitarium+▲	*TB*	*State*	*475*	*433*	..	...	*498*
Huntington, 78,836—Cabell							
Chesapeake and Ohio Hospital★+▲	Gen	NPAssn	165	138	20	53	3,503
Huntington Memorial Hosp.▲○	Gen	NPAssn	130	89	22	398	3,087
Huntington Orthopedic Hosp.▲	Orth	NPAssn	50	69	..	...	539
Huntington State Hospital...	Ment	State	*977*	*948*	..	...	*569*
St. Mary's Hospital★+▲○......	Gen	Church	*228*	*192*	42	1,500	10,210
Veterans Admin. Hospital▲..	Gen	Vet	*266*	*236*	..	...	*2,839*
Keyser, 6,177—Mineral							
Potomac Valley Hospital....	Gen	Corp	*50*	*35*	12	272	1,488
Kingwood, 1,676—Preston							
Kercheval Memorial Clinic....	Gen	Corp	10	7	5	70	447
Lakin, 50—Mason							
Lakin State Hospital.........	Ment	State	410	*396*	..	...	94
Logan, 5,166—Logan							
Logan General Hospital▲○...	Gen	Corp	100	51	16	230	3,106
Mercy Hospital	Gen	Corp	75	42	6	56	1,962
Madison, 1,205—Boone							
Madison General Hospital....	Gen	Corp	44	15	6	68	1,148
Marlinton, 1,644—Pocahontas							
Pocahontas Memorial Hosp..	Gen	County	35	22	8	83	594
Martinsburg, 15,063—Berkeley							
City Hospital○	Gen	NPAssn	*85*	*54*	*11*	*221*	...
Kings Daughters Hospital▲○..	Gen	NPAssn	*96*	*70*	*17*	*295*	*2,107*
Milton, 1,641—Cabell							
Morris Memorial Hospital+▲..	Orth	NPAssn	150	*76*	..	...	182
Montgomery, 3,231—Fayette							
Laird Memorial Hosp.+▲○....	Gen	Part	127	90	8	203	4,167
Morgantown, 16,655—Monongalia							
Heiskell Memorial Hospital▲○	Gen	Indiv	90	76	25	445	4,475
Monongalia General Hosp.▲○	Gen	County	103	63	22	406	2,406
New Martinsville, 3,491—Wetzel							
Wetzel County Hospital......	Gen	NPAssn	*30*	*22*	8	183	1,000
Oak Hill, 3,213—Fayette							
Oak Hill Hospital▲..........	Gen	Part	75	55	8	163	2,406
Parkersburg, 30,103—Wood							
Camden-Clark Memorial Hospital▲○	Gen	City	165	128	18	752	5,138
St. Joseph's Hospital★▲○.....	Gen	Church	130	124	25	490	3,896
Parsons, 2,077—Tucker							
Tucker County Hospital......	*Gen*	Corp	*30*	*24*	10	87	*706*
Philippi, 1,955—Barbour							
Myers Clinic Hospital▲........	Gen	Part	54	47	6	115	2,436
Princeton, 7,426—Mercer							
Mercer Memorial Hospital▲...	Gen	Corp	70	35	12	271	1,623
..	Gen	Indiv	30	11	8	62	461
	Gen	Church	25	16	5	82	639
Ronceverte, 2,265—Greenbrier							
Greenbrier Valley Hospital▲○	Gen	Corp	*50*	27	8	75	1,232
South Charleston, 10,377—Kanawha							
Dunn Hospital	Gen	Indiv	*30*	12	12	96	919
Kanawha Valley Medical Center	Ven	*USPHS*	*124*	*61*	..	...	*3,554*

Key to symbols and abbreviations is on page 1091

WEST VIRGINIA—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census†	Bassinets	Number of Births	Admissions†
Spencer, 2,497—Roane							
De Pue Hospital	Gen	Indiv	24	11	6	95	579
Spencer State Hospital	Ment	State	959	938	..	...	589
Triadelphia, 359—Ohio							
Ohio County Tuberculosis Sanatorium	TB	County	38	35	..	...	30
Welch, 6,264—McDowell							
Grace Hospital▲	Gen	Corp	135	115	9	251	4,702
Stevens Clinic Hospital▲	Gen	Corp	140	92	10	167	4,944
Welch Emergency Hospital	Gen	State	115	55	6	46	1,539
Weston, 8,268—Lewis							
General Hospital	Gen	Indiv	44	19	7	96	1,334
Weston City Hospital	Gen	Corp	35	20	9	136	1,008
Weston State Hospital▲	Ment	State	1,900	1,763	..	...	605
Wheeling, 61,099—Ohio							
Ohio Valley General Hosp.★▲◇	Gen	NPAssn	320	256	36	1,025	7,723
Wheeling Hospital★▲◇	Gen	Church	240	210	30	883	6,287
Williamson, 8,366—Mingo							
Williamson Memorial Hosp.▲◇	Gen	Indiv	108	85	9	279	4,715

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census†	Bassinets	Number of Births	Admissions†
Berkeley Springs, 1,145—Morgan							
"The Pines" West Virginia Foundation for Crippled Children	Orth	NPAssn	40	16	..	...	29
Charleston, 67,914—Kanawha							
Hillcrest Sanatorium	TbChil	NPAssn	52	35	..	...	56
Huntington, 78,836—Cabell							
Rowley Clinic Hospital	Gen	Indiv	19	12	4	68	713
Moundsville, 14,168—Marshall							
West Virginia Penitentiary Hospital	Inst	State	30	No data supplied			
St. Marys, 2,201—Pleasants							
West Virginia Training School	MeDe	State	80	80	..	...	30

WISCONSIN

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census†	Bassinets	Number of Births	Admissions†
Adams, 1,310—Adams							
Adams-Friendship Hospital	Gen	NPAssn	8	6	2	35	172
Algoma, 2,652—Kewaunee							
Algoma Hospital	Gen	NPAssn	14	6	4	100	534
Amery, 1,461—Polk							
Amery Hospital	Gen	NPAssn	19	13	5	105	520
Antigo, 9,495—Langlade							
Langlade County Memorial Hospital	Gen	Church	51	54	12	387	1,973
Appleton, 28,436—Outagamie							
St. Elizabeth Hospital★▲	Gen	Church	175	150	45	1,301	6,275
Arcadia, 1,830—Trempealeau							
St. Joseph's Hospital	Gen	Church	22	14	6	130	700
Ashland, 11,101—Ashland							
Ashland General Hospital▲	Gen	NPAssn	67	42	8	131	1,409
St. Joseph's Hospital▲◇	Gen	Church	135	97	15	460	3,915
Baldwin, 918—St. Croix							
Baldwin Community Hospital	Gen	NPAssn	16	11	6	167	511
Baraboo, 6,415—Sauk							
St. Mary's Ringling Hospital	Gen	Church	56	51	15	454	2,468
Bayfield, 1,212—Bayfield							
Pureair Sanatorium	TB	Counties	65	64	..	...	110
Beaver Dam, 10,356—Dodge							
Lutheran Deaconess Hospital	Gen	Church	50	30	12	305	1,433
St. Joseph's Hospital	Gen	Church	60	45	14	255	2,086
Beloit, 25,365—Rock							
Beloit Municipal Hospital▲	Gen	City	125	81	32	819	3,475
Berlin, 4,247—Green Lake							
Berlin Memorial Hospital	Gen	NPAssn	35	24	13	212	1,124
Black River Falls, 2,539—Jackson							
Krohn Clinic and Hospital	Gen	Part	29	19	10	295	526
Boscobel, 2,008—Grant							
Brookside-Parker Hospital	Gen	Part	18	9	8	77	275
Burlington, 4,414—Racine							
Burlington Memorial Hosp.▲	Gen	NPAssn	35	25	10	236	1,130
Chippewa Falls, 10,368—Chippewa							
Northern Wisconsin Colony and Training School	MeDe	State	1,429	1,312	11	6	270
St. Joseph's Hospital	Gen	Church	115	91	10	558	3,382
Columbus, 2,760—Columbia							
St. Mary's Hospital	Gen	Church	40	26	12	217	1,016
Cumberland, 1,539—Barron							
Cumberland Hospital	Gen	NPAssn	22	9	5	108	430
Dodgeville, 2,269—Iowa							
Dodgeville General Hospital	Gen	NPAssn	23	17	5	122	771
St. Joseph's Hospital	Gen	Church	61	54	15	225	2,010
Eau Clair, 30,745—Eau Claire							
Luther Hospital★▲◇	Gen	NPAssn	146	124	30	567	4,168
Mt. Washington Sanatorium▲	TB	County	91	77	..	...	86
Sacred Heart Hospital	Gen	Church	156	148	24	526	5,427
Edgerton, 3,266—Rock							
Edgerton Memorial Hospital	Gen	NPAssn	32	19	12	145	883
Elkhorn, 2,382—Walworth							
Walworth County Hospital▲	Gen	County	75	44	19	439	1,900
Fond du Lac, 27,209—Fond du Lac							
St. Agnes Hospital★▲◇	Gen	Church	278	259	53	1,015	7,523
Fort Atkinson, 6,153—Jefferson							
Fort Atkinson Memorial Hospital	Gen	NPAssn	19	14	8	165	625

WISCONSIN—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census†	Bassinets	Number of Births	Admissions†
Frederic, 725—Polk							
Frederic Municipal Hospital	Gen	City	12	...	4	Estab. 1945	
Grantsburg, 874—Burnett							
Community Hospital	Gen	NPAssn	32	22	5	68	520
Green Bay, 46,235—Brown							
Bellin Memorial Hospital▲◇	Gen	Church	97	79	22	655	3,557
St. Mary's Hospital▲◇	Gen	Church	103	71	25	662	3,676
St. Vincent's Hospital	Gen	Church	225	223	28	949	9,299
Hartford, 3,910—Washington							
St. Joseph's Hospital	Gen	Church	56	28	15	241	983
Hawthorne, 75—Douglas							
Middle River Sanatorium▲	TB	County	142	87	..	...	91
Hayward, 1,571—Sawyer							
Hayward Indian Hospital	Gen	IA	45	18	9	81	585
Hazel Green, 582—Grant							
Hazel Green Hospital	Gen	Indiv	14	8	6	62	327
Hillsboro, 1,146—Vernon							
Hansberry Hospital	Gen	Indiv	25	14	5	124	559
Iola, 746—Waupaca							
Iola Hospital	Gen	Corp	20	9	6	107	468
Janesville, 22,992—Rock							
Mercy Hospital+▲◇	Gen	Church	120	94	25	626	3,409
Pinehurst Sanatorium▲	TB	County	75	55	..	...	61
Jefferson, 3,059—Jefferson							
Forest Lawn Sanatorium	TB	County	58	36	..	...	30
Kaukauna, 7,382—Outagamie							
Riverview Sanatorium▲	TB	County	65	44	..	...	78
Kenosha, 47,765—Kenosha							
Kenosha Hospital▲	Gen	NPAssn	150	105	30	706	3,910
St. Catherine's Hospital▲	Gen	Church	76	58	24	591	2,563
Willowbrook Sanatorium▲	TB	County	71	38	..	...	27
Keshena, 500—Shawano							
St. Joseph's Indian Hospital	Gen	Fed	63	18	9	89	664
La Crosse, 42,707—La Crosse							
Grandview Hospital▲	Gen	NPAssn	106	54	10	174	1,802
La Crosse Hospital	Gen	NPAssn	36	23	8	69	900
La Crosse Lutheran Hosp.★+▲	Gen	Church	120	100	12	283	4,130
St. Ann's Hospital	Unit of St. Francis Hospital						
St. Francis Hospital★▲◇	Gen	Church	275	254	40	1,095	7,735
Ladysmith, 3,671—Rusk							
St. Mary's Hospital	Gen	Church	42	38	12	306	1,474
Lancaster, 2,963—Grant							
Lancaster General Hospital	Gen	Part	15	No data supplied			
Laona, 1,800—Forest							
Ovitz Hospital	Gen	Indiv	14	5	4	60	208
Madison, 67,447—Dane							
Lake View Sanatorium▲	TB	County	142	134	..	...	128
Madison General Hospital★▲◇	Gen	NPAssn	177	169	26	825	6,252
Methodist Hospital★▲◇	Gen	Church	110	95	17	289	3,576
Morningside Sanatorium▲	TB	NPAssn	50	45	..	...	39
St. Mary's Hospital★▲◇	Gen	Church	200	180	30	1,394	7,524
State of Wisconsin General Hospital★+▲◇	Gen	State	730	565	22	293	11,398
Wisconsin Orthopedic Hospital for Children	Unit of State of Wisconsin General Hosp.						
Wisconsin Psychiatric Institute	Unit of State of Wisconsin General Hosp.						
Manitowoc, 24,404—Manitowoc							
Holy Family Hospital▲◇	Gen	Church	145	120	32	896	4,801
Marinette, 14,183—Marinette							
Marinette General Hospital	Gen	County	80	59	25	391	2,559
Marshfield, 10,359—Wood							
St. Joseph's Hospital★▲◇	Gen	Church	198	143	18	614	5,499
Mauston, 2,621—Juneau							
Mauston Hospital	Gen	Corp	45	23	10	177	1,047
Medford, 2,361—Taylor							
Medford Clinic	Gen	Corp	38	23	6	191	1,294
Mendota, 400—Dane							
Mendota State Hospital	Ment	State	860	810	..	...	1,029
Veterans Admin. Hospital▲	Ment	Vet	257	201	..	...	217
Menomonie, 6,582—Dunn							
Menomonie City Hospital	Gen	City	28	28	7	281	824
Merrill, 8,711—Lincoln							
Holy Cross Hospital▲	Gen	Church	58	44	11	308	1,678
Lincoln County Hospital	Gen	County	24	18	2	3	80
Milwaukee, 587,472—Milwaukee							
Columbia Hospital★+▲◇	Gen	NPAssn	135	121	35	863	4,330
Evangelical Deaconess Hospital★▲◇	Gen	Church	135	109	35	1,062	5,378
Johnston Emergency Hosp▲	Emer	City	25	33	4	2	1,193
Milwaukee Children's Hospital+▲⊙	Chil	NPAssn	150	122	..	...	4,266
Milwaukee County Asylum for Chronic Insane	Ment	County	1,914	1,842	..	...	361
Milwaukee County Hosp.★+▲◇	Gen	County	724	542	80	254	11,169
Milwaukee County Hospital for Mental Diseases+▲⊙	Ment	County	1,088	1,004	..	...	504
Milwaukee Hospital★+▲◇	Gen	Church	290	251	69	1,846	8,077
Milwaukee Sanitarium	See Wauwatosa						
Misericordia Hospital★▲◇	Gen	Church	110	93	40	1,172	4,318
Mount Sinai Hospital★▲◇	Gen	NPAssn	168	156	30	1,555	7,093
Muirdale Sanatorium+▲⊙	TB	County	545	494	..	...	529
Sacred Heart Sanitarium▲◇	Gen	Church	250	208	..	...	2,321
St. Anthony Hospital	Gen	Church	52	46	26	808	2,701
St. Joseph's Hospital★+▲◇	Gen	Church	325	263	85	2,572	11,889
St. Luke's Hospital★+▲	Gen	Church	102	93	28	1,054	4,889
St. Mary's Hill Sanitarium▲⊙	N&M	Church	100	77	..	...	303
St. Mary's Hospital★+▲◇	Gen	Church	210	169	40	1,342	6,826
St. Michael Hospital★⊙	Gen	Church	145	110	25	614	5,016
Shorewood Hospital Sanit.	N&M	Corp	54	49	..	...	267
South View Hospital▲	Iso	City	250	29	..	...	1,178

Key to symbols and abbreviations is on page 1091

WISCONSIN—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Stark Hospital	Unit of Milwaukee Children's Hospital						
Veterans Admin. Hospital▲	GenTb	Vet	1,393	1,132	..	...	5,155
West Side Hospital	Gen	NPAssn	39	14	14	77	1,128
Mondovi, 2,077—Buffalo							
Mondovi Clinic Hospital	Gen	Indiv	17	13	6	61	378
Monroe, 6,182—Green							
St. Cl	Gen	Church	75	67	20	523	3,479
Neenah,							
Theda ▲	Gen	NPAssn	58	56	17	518	2,384
Neillsville, —Clark							
Neillsville Hospital	Gen	Part	21	6	11	110	674
New London, 4,825—Waupaca							
Borchardt Clinic Memorial Hospital	Gen	NPAssn	13	9	6	66	304
Community Hospital	Gen	Church	45	37	14	361	1,382
Oconomowoc, 4,562—Waukesha							
Rogers Memorial Sanitarium	N&M	NPAssn	54	46	..	...	87
Summit Hospital	Gen	Corp	47	42	6	143	614
Oconto Falls, 1,888—Oconto							
Oconto Falls Hospital	Gen	City	20	9	8	126	457
Onalaska, 1,742—La Crosse							
Oak Forest Sanatorium▲	TB	County	65	58	..	...	89
Osceola, 642—Polk							
Ladd Memorial Hospital	Gen	Part	12	8	2	38	355
Oshkosh, 39,089—Winnebago							
Mercy Hospital*▲◇	Gen	Church	196	143	54	834	5,971
Park Falls, 3,252—Price							
Park Falls Hospital	Gen	Indiv	25	15	4	144	698
Pewaukee, 1,352—Waukesha							
Oak Sanatorium▲	TB	Counties	40	30	..	...	43
	Gen	Part	21	10	8	109	352
	Gen	Indiv	16	12	5	80	490
Plymouth, 4,170—Sheboygan							
Plymouth Hospital	Gen	Church	42	22	13	194	693
Rocky Knoll Sanatorium▲	TB	County	76	60	..	...	44
Portage, 7,016—Columbia							
St. Savior's General Hospital▲	Gen	Church	90	61	14	380	2,191
Port							
St.	Gen	Church	70	50	15	363	1,643
Prairi							
Beaumont Hospital	Gen	NPAssn	21	12	8	128	461
Prairie du Chien Sanitarium-Hospital	Gen	NPAssn	30	37	8	117	1,795
Prescott, 857—Pierce							
St. Croixdale Sanitarium	GenN&M	Corp	50	48	4	23	217
Racine, 67,195—Racine							
St. Luke's Hospital▲◇	Gen	Church	110	87	40	800	3,594
St. Mary's Hospital*▲!	Gen	Church	220	120	51	821	5,775
Sunny Rest Sanatorium▲	TB	County	82	58	..	...	52
Reedsburg, 3,608—Sauk							
Reedsburg Municipal Hospital	Gen	City	30	24	10	235	1,102
Rhinelander, 8,501—Oneida							
St. Mary's Hospital	Gen	Church	75	65	10	349	1,885
Rice Lake, 5,719—Barron							
Lakeside Methodist Hospital	Gen	Church	50	30	8	259	1,394
St. Joseph's Hospital	Gen	Church	40	23	11	254	1,420
Richland Center, 4,364—Richland							
Richland Hospital	Gen	NPAssn	73	64	15	387	2,967
Ripon, 4,566—Fond du Lac							
Ripon Municipal Hospital	Gen	City	18	16	6	158	744
River Falls, 2,806—Pierce							
City Hospital	Gen	City	25	16	8	149	504
St. Croix Falls, 1,007—Polk							
St. Croix Falls Hospital	Gen	NPAssn	21	11	4	63	371
Shawano, 5,565—Shawano							
Shawano Municipal Hospital	Gen	NPAssn	65	50	20	430	1,781
Sheboygan, 40,638—Sheboygan							
St. Nicholas Hospital	Gen	Church	208	174	40	901	5,770
Sheboygan Memorial Hosp.	Gen	NPAssn	100	63	20	402	2,284
Shullsburg, 1,197—Lafayette							
Dr. Ennis' Hospital	Gen	Indiv	10	5	4	58	200
South Milwaukee, 11,134—Milwaukee							
South Milwaukee Hospital	Gen	Indiv	16	9	6	278	738
Sparta, 5,820—Monroe							
St. Mary's Hospital	Gen	Church	75	44	18	430	1,584
Stanley, 2,021—Chippewa							
Victory Memorial Hospital	Gen	NPAssn	19	15	7	190	710
Statesan, 110—Waukesha							
Wisconsin State Sanat.+▲	TB	State	241	159	..	...	94
Stevens Point, 15,777—Portage							
River Pines Sanatorium▲	TB	Church	61	59	..	...	57
St. Michael's Hospital▲	Gen	Church	97	85	20	461	3,138
Stoughton, 4,743—Dane							
Stoughton Hospital	Gen	NPAssn	33	24	10	241	956
Sturgeon Bay, 5,439—Door							
Door County Memorial Hosp.	Gen	NPAssn	60	37	21	370	2,126
	Gen	Church	50	46	10	182	1,272
	Gen	Church	38	33	14	390	1,251
▲	Gen	Church	138	110	28	401	3,036
	Gen	Church	50	33	6	101	872
	Gen	City	44	41	15	256	1,722
Union Grove, 973—Racine							
Southern Wisconsin Colony and Training School	MeDe	State	845	737	..	...	107

WISCONSIN—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Veterans Administration, —Milwaukee							
Veterans Admin. Hospital	See Milwaukee						
Viroqua, 3,549—Vernon							
Viroqua Hospital	Gen	Corp	26	23	10	238	1,099
Washburn, 2,363—Bayfield							
Washburn Hospital	Gen	NPAssn	15	6	5	53	262
	Gen	Church	75	58	20	495	2,251
	Unit of Milwaukee Children's Hospital,						
Veterans Admin. Hosp. Annex	Milwaukee						
Waukesha Memorial Hosp.▲						798	2,974
Waupaca, 3,458—Waupaca							
City Hospital	Gen	Indiv	12	9	4	50	275
Waupaca Hospital and Clinic	Gen	Part	13	9	6	56	276
Waupun, 6,798—Fond du Lac							
Central State Hospital	Ment	State	345	341	..	...	81
Wausau, 27,268—Marathon							
Mount View Sanatorium▲	TB	County	74	60	..	...	61
St. Mary's Hospital▲◇	Gen	Church	170	149	30	747	6,417
Wausau Memorial Hosp ▲	n	NPAssn	95	76	25	427	3,055
W							
	Milwaukee						
▲	N&M	Corp	147	120	..	...	330
St. M	Gen	Church	32	34	15	209	1,453
W —Brown							
Hickory Grove Sanatorium	TB	County	110	82	..	...	130
Whitehall, 1,035—Trempealeau							
Whitehall Community Hosp.	Gen	NPAssn	30	29	9	201	1,440
Whitelaw, 225—Manitowoc							
▲	TB	County	52	43	..	...	59
	Gen	Indiv	24	15	4	66	686
Winnebago, 150—Winnebago							
Sunny View Sanatorium▲	TB	Counties	98	87	..	...	115
Winnebago State Hospital▲	Ment	State	946	902	..	...	831
Wisconsin Rapids, 11,416—Wood							
Riverview Hospital	Gen	NPAssn	85	43	24	468	2,007
Wood, —Milwaukee							
Veterans Admin. Hospital	See Milwaukee						

Related Institutions

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Appleton, 28,436—Outagamie							
Outagamie County Asylum	Ment	County	272	265	..	...	31
Chippewa Falls, 10,368—Chippewa							
Chippewa County Asylum	Ment	County	375	363	..	...	38
Dodgeville, 2,269—Iowa							
Iowa County Asylum	Ment	County	190	170	..	...	15
Eau Claire, 30,745—Eau Claire							
Eau Claire County Asylum	Ment	County	246	244	..	...	23
Elkhorn, 2,382—Walworth							
Walworth County Asylum for the Insane	Ment	County	238	234	..	...	53
Fond du Lac, 27,209—Fond du Lac							
Fond du Lac County Asylum	Ment	County	325	317	..	...	37
Green Bay, 46,235—Brown							
Brown County Asylum	Ment	County	304	305	..	...	67
Wisconsin State Reformatory Hospital	Inst	State	12	4	..	...	228
Itasca, —Douglas							
Douglas County Asylum and Tuberculosis Sanatorium	MentTb	County	356	332	..	...	76
Parkland Sanatorium	Unit of Douglas County Asylum and Tuberculosis Sanatorium						
Janesville, 22,992—Rock							
Rock County Asylum	Ment	County	370	332	..	...	87
Jefferson, 3,059—Jefferson							
Jefferson County Asylum	Ment	County	276	260	..	...	56
Juneau, 1,301—Dodge							
Dodge County Asylum and Home	Ment	County	284	251	..	...	46
Kewaunee, 2,533—Kewaunee							
Cmejla Hospital	Gen	Part	8	2	2	32	151
Lake Tomahawk, 105—Oneida							
Lake Tomahawk State Camp	TB	State	48	27	..	...	22
Lancaster, 2,963—Grant							
Grant County Asylum	Ment	County	256	256	..	...	37
Madison, 67,447—Dane							
East Washington Avenue Hospital	Iso	City	50	14	..	...	240
Manitowoc, 24,404—Manitowoc							
Manitowoc County Asylum	Ment	County	222	214	..	...	29
Marshfield, 10,359—Wood							
Wood County Asylum for Chronic Insane	Ment	County	250	241	..	...	37
Menomonie, 6,582—Dunn							
Dunn County Asylum	Ment	County	200	178	..	...	13
Milwaukee, 587,472—Milwaukee							
Layton Home	Unit of Milwaukee Hospital						
Milwaukee County Home for Dependent Children	Inst	County	75	30	..	...	1,712
St. Camillus Hospital	Incur	Church	83	80	..	...	124
Salvation Army Martha Washington Women's Home and Hospital	Mat	Church	76	42	15	131	220
Monroe, 6,182—Green							
Green County Asylum	Ment	County	274	241	..	...	43

Key to symbols and abbreviations is on page 1091

WISCONSIN—Continued

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
New Richmond, 2,388—St. Croix							
St. Croix County Asylum	Ment	County	182	173	..	...	32
Oconto, 5,362—Oconto							
Oconto County and City Hospital	Gen	NPAssn	50	13	15	126	1,206
Oshkosh, 39,089—Winnebago							
Alexian Brothers Hospital	N&M	Church	84	75	..	...	38
Owen, 1,083—Clark							
Clark County Hospital	Ment	County	385	379	..	...	44
Peshtigo, 1,947—Marinette							
Marinette County Asylum	Ment	County	310	288	..	...	43
Racine, 67,195—Racine							
Lincoln Memorial Hospital	Iso	City	50	13	..	...	227
Racine County Asylum	Ment	County	320	317	..	...	378
Racine County Hospital	GenInst	County	55	48	..	...	220
Reedsburg, 3,608—Sauk							
Sauk County Hospital and Home	Ment	County	210	190	..	...	25
Richland Center, 4,364—Richland							
Richland County Asylum	Ment	County	154	143	..	...	24
Shawano, 5,565—Shawano							
Shawano County Asylum	Ment	County	190	189	..	...	20
Sheboygan, 40,638—Sheboygan							
Sheboygan County Hospital for Chronic Insane	Ment	County	300	277	..	...	59
Sparta, 5,820—Monroe							
Monroe County Asylum	Ment	County	190	185	..	...	28
Superior, 35,136—Douglas							
Douglas County Asylum and Tuberculosis Sanatorium	See Itasca						
Verona, 535—Dane							
Dane County Hospital and Home	Ment	County	293	280	..	...	26
Viroqua, 3,549—Vernon							
Vernon County Asylum	Ment	County	151	160	..	...	39
Watertown, 11,301—Jefferson							
Bethesda Lutheran Home	McDe	Church	360	366	..	...	20
Waukesha, 19,242—Waukesha							
Waukesha County Asylum for Chronic Insane	Ment	County	230	215	..	...	277
Waupun, 6,798—Fond du Lac							
Wisconsin State Prison Hosp.	Inst	State	22	17	..	...	470
Wausau, 27,268—Marathon							
Marathon County Asylum	Ment	County	235	212	..	...	51
Marathon County Home and Hospital	GenInst	County	60	55	..	...	159
Wauwatosa, 27,769—Milwaukee							
Milwaukee County Home for Dependent Children	See Milwaukee						
St. Camillus Hospital	See Milwaukee						
Salvation Army Martha Washington Women's Home and Hospital	See Milwaukee						
West Bend, 5,452—Washington							
Washington County Asylum	Ment	County	165	156	..	...	31
West Salem, 1,254—La Crosse							
La Crosse County Asylum	Ment	County	303	285	..	...	24
Weyauwega, 1,173—Waupaca							
Waupaca County Insane Asylum	Ment	County	193	195	..	...	25
Whitehall, 1,035—Trempealeau							
Trempealeau County Asylum	Ment	County	147	144	..	...	9
Winnebago, 150—Winnebago							
Winnebago County Asylum	Ment	County	268	266	..	...	12
Wyocena, 706—Columbia							
Columbia County Asylum	Ment	County	366	310	..	...	62

WYOMING

Hospitals and Sanatoriums

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Afton, 1,211—Lincoln							
Latter Day Saint Star Valley Hospital	Gen	Church	13	6	8	171	537
Basin, 1,099—Big Horn							
Basin Hospital	Gen	Indiv	8	3	4	45	130
Wyoming State Sanatorium▲	TB	State	34	22	..	...	44
Casper, 17,964—Natrona							
Memorial Hospital of Natrona County▲	Gen	County	130	97	24	563	3,417
Cheyenne, 22,474—Laramie							
Memorial Hospital of Laramie County▲	Gen	County	133	94	25	639	4,398
Veterans Admin. Hospital▲	Gen	Vet	201	157	..	...	1,633
Cody, 2,536—Park							
Cody Hospital	Gen	NPAssn	35	15	12	191	1,512
Douglas, 2,205—Converse							
Converse County Memorial Hospital	Gen	County	20	16	8	108	595
Evanston, 3,605—Uinta							
Wyoming State Hospital▲	Ment	State	675	608	..	...	105
Fort Warren, 22—Laramie							
Regional Hospital▲	Gen	Army	240	103	6	41	2,441
Fort Washakie, 150—Fremont							
Wind River Indian Hospital	Gen	IA	50	12	6	61	401
Gillette, 2,177—Campbell							
McHenry Hospital	Gen	Indiv	12	8	5	40	395
Greybull, 1,828—Big Horn							
St. Luke's Hospital	Gen	Indiv	8	4	4	80	305

WYOMING—Continued

Hospitals and Sanatoriums	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Jackson, 1,046—Teton							
St. John's Hospital	Gen	Church	22	6	4	89	755
Kemmerer, 2,026—Lincoln							
Lincoln County Miner's Hosp.	Gen	NPAssn	25	5	6	73	371
Lander, 2,594—Fremont							
Bishop Randall Hospital	Gen	Church	20	15	6	108	680
Laramie, 10,627—Albany							
Ivinson Memorial Hospital	Gen	NPAssn	70	41	17	323	2,920
Lovell, 2,175—Big Horn							
Lovell Hospital	Gen	Part	20	12	8	139	707
Lusk, 1,814—Niobrara							
Lusk Hospital	Gen	Indiv	16	10	9	41	420
Spencer Hospital	Gen	Indiv	23	12	7	79	957
Rock Springs, 9,827—Sweetwater							
Wyoming General Hospital◇	Gen	State	105	80	25	510	3,289
Sheridan, 10,529—Sheridan							
Sheridan County Memorial Hospital◇	Gen	County	70	53	15	243	1,816
Veterans Admin. Hospital▲⊙	Ment	Vet	713	671	..	...	420
Wheatland, 2,110—Platte							
Wheatland General Hospital▲	Gen	NPAssn	41	23	7	100	1,289
Worland, 2,710*—Washakie							
Worland Hospital	Gen	Corp	19	12	8	153	697

Related Institutions

Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Hanna, 1,127—Carbon							
Hanna Hospital	Gen	NPAssn	14	6	3	31	303
Lander, 2,594—Fremont							
Wyoming State Training School	McDe	State	391	389	..	...	14
Sheridan, 10,529—Sheridan							
Reynolds Home	Gen	Indiv	12	9	8	106	312

ALASKA

Hospitals, Sanatoriums and Related Institutions

Hospitals, Sanatoriums and Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Anchorage, 3,495							
Providence Hospital	Gen	Church	73	52	13	320	3,510
Barrow, 363							
Point Barrow Hospital	Gen	Fed	25	...	3	...	...
Bethel, 376							
Bethel Hospital	Gen	IA	47	43	7	...	348
Cordova, 938							
Cordova Community Hosp.	Gen	Indiv	30	18	4	27	411
Fairbanks, 3,455							
St. Joseph's Hospital	Gen	Church	52	40	10	163	1,160
Fort Yukon, 274							
Hudson Stuck Memorial Hospital▲	Gen	Church	39	21	4	26	243
Haines, 357							
Station Hospital	Gen	Army	15	7	1	3	141
Juneau, 5,729							
St. Ann's Hospital	Gen	Church	55	42	10	...	1,227
U. S. Hospital for Natives	GenTb	IA	61	52	5	42	415
Kanakanak, 133							
Kanakanak Native Hospital	Gen	IA	31	...	6	...	...
Ketchikan, 4,695							
Ketchikan General Hospital	Gen	Church	75	70	17	168	1,416
Kodiak, 864							
Contractors Hospital	Indus	NPAssn	42	...	5	...	...
Griffin Memorial Hospital	Gen	Church	18	8	5	46	260
Kotzebue, 372							
Kotzebue Hospital	Gen	IA	17	...	1	...	...
Nome, 1,559							
Maynard-Columbus Hospital	Gen	Church	22	8	4	40	251
Palmer, 150							
Matanuska Valley Hospital	Gen	Church	28	25	4	41	475
Petersburg, 1,323							
Petersburg General Hospital	Gen	City	10	5	4	40	224
St. Paul Island (Unalaska P. O.), 299							
St. Paul Island Hospital	Gen	Fed	10	2	2	14	107
Seward, 949							
Seward General Hospital	Gen	Church	30	14	6	41	649
Sitka, 1,987							
Pioneers' Home Hospital	Inst	Ter	50	31	..	...	127
Skagway, 634							
Pacific and Arctic Railway and Navigation Company Hospital	Gen	NPAssn	10	2	2	12	132
Tanana, 170							
Tanana Hospital	Gen	IA	30	...	6	...	...
Valdez, 52							
Valdez Community Hospital	Gen	NPAssn	31	15	2	6	99
Wrangell, 1,162							
Bishop Rowe General Hosp.	Gen	Church	12	3	5	24	177

CANAL ZONE

Hospitals, Sanatoriums and Related Institutions.

Hospitals, Sanatoriums and Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Ancon, 1,946							
Gorgas Hospital*+▲	Gen	Fed	1,430	870	55	1,019	21,615
Balboa, 3,922							
Palo Seco Leper Colony	Lepro	Fed	140	118	..	...	7
Station Hospital▲	Gen	Army	55	...	..	...	...
Corozal, 1,270							
Corozal Hospital	Ment	Fed	334	275	..	...	274
Station Hospital	Gen	Army	47	33	..	...	1,066

Key to symbols and abbreviations is on page 1091

CANAL ZONE—Continued

Hospitals, Sanatoriums and Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Cristobal, 826							
Colon Margarita Hospital....	Gen	Fed	440	209	23	509	6,463
Fort Sherman, 1,329							
Station Hospital	Gen	Army	59	53	..	...	1,295

HAWAII

Hospitals, Sanatoriums and Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Aiea, 3,553—Honolulu							
Aiea Hospital	Gen	NPAssn	37	25	4	127	1,533
Ewa, 3,570—Honolulu							
Ewa Plantation Company Hospital	Gen	NPAssn	48	25	6	125	1,286
Haina, —Hawaii							
Honokaa Sugar Company Hospital	Gen	NPAssn	30	12	4	52	360
Hakalau, 525—Hawaii							
Hakalau Plantation Hospital	Gen	NPAssn	20	11	3	38	515
Hana, 293—Maui							
Hana County Hospital.......	Gen	County	25	10	4	40	529
Hanapepe, 1,088—Kauai							
Betsui Memorial Hospital....	Gen	Indiv	16	8	5	107	458
Hilo, 23,351—Hawaii							
Hilo Memorial Hospital▲.....	Gen	County	168	101	18	456	3,816
Dr. Z. Matayoshi Hospital..	Gen	Indiv	42	13	5	37	533
Puumaile Hospital	TB	County	225	192	..	...	160
Honokaa, 1,069—Hawaii							
Okada Hospital	Gen	Indiv	6	4	3	43	171
Honolulu, 179,359—Honolulu							
Kalihi Hospital	Lepro	Ter	140	...	..	...	...
Kapiolani Maternity and Gynecological [illegible]	[illegible]	[illegible]	64	46	75	2,345	2,724
[illegible]			104	58	..	...	3,561
[illegible]			120	103	20	731	4,837
[illegible]	TB	NPAssn	485	464	..	...	415
[illegible]	Gen	NPAssn	348	303	44	2,058	12,961
[illegible]	Gen	Church	100	110	30	1,487	5,459
Shriners Hospital for Crippled Children▲⊙	Orth	NPAssn	28	21	..	...	81
Tripler General Hospital▲....	Gen	Army	407	279	10	105	4,242
Hoolehua, —Maui							
Robert W. Shingle, Jr. Memorial Hospital	Gen	Church	30	13	8	58	574
Kahuku, 1,505—Honolulu							
Kahuku Hospital▲	Gen	NPAssn	30	17	6	124	942
Kalaupapa, —Kalawao							
[illegible] Settlement	Lepro	Ter	340	334	..	...	11
[illegible]							
[illegible]	Ment	Ter	1,100	1,101	..	...	267
[illegible]							
Samuel Mahelona Memorial Hospital	TB	County	120	...	..	...	...
Kealakekua, 350—Hawaii							
Kona Hospital	Gen	County	50	22	7	106	509
Kohala, 720—Hawaii							
Kohala County Hospital.....	Gen	County	50	14	6	110	781
Koloa, 1,844—Kauai							
Koloa Sugar Company Hosp.	Gen	NPAssn	22	5	3	40	178
Kula (Waiakoa P. O.), 25—Maui							
Kula General Hospital........	Gen	County	22	8	6	35	363
Kula Sanatorium	TB	County	214	173	..	...	102
Lahaina, 5,217—Maui							
Pioneer Mill Company's Hosp.	Gen	NPAssn	65	40	9	123	1,275
Lanai City, 3,597—Maui							
Lanai City Hospital.........	Gen	NPAssn	24	11	6	75	766
Lihue, 4,272—Kauai							
G. N. Wilcox Memorial Hosp.▲	Gen	NPAssn	94	49	14	368	2,044
Maunaloa, —Maui							
Maunaloa Hospital	Gen	NPAssn	19	3	5	17	251
Olaa, 597—Hawaii							
Olaa Hospital	Gen	NPAssn	49	20	11	118	890
Ookala, 526—Hawaii							
Ookala Hospital	Gen	NPAssn	9	...	4	...	...
Paauilo, 1,233—Hawaii							
Hamakua Mill Company Hospital	Gen	NPAssn	11	6	2	31	237
Pahala, 290—Hawaii							
Hawaiian Agricultural Company Hospital▲	Gen	NPAssn	37	20	7	85	543
Paia, 4,272—Maui							
Maui Agricultural Company's Paia Hospital	Gen	NPAssn	76	44	10	209	1,701
Papaaloa, 73—Hawaii							
Laupahoehoe Sugar Company Hospital	Gen	NPAssn	27	8	4	51	400
Pearl City, 1,071—Honolulu							
Waimano Home for Feebleminded Persons	MeDe	Ter	582	500	..	...	527
Pepeekeo, 520—Hawaii							
Pepeekeo Hospital	Gen	NPAssn	40	...	5	...	...
Puunene, 4,456—Maui							
Puunene Hospital	Gen	NPAssn	110	42	10	167	2,001
Waialua, 2,532—Honolulu							
Waialua Agricultural Company Ltd., Hospital........	Gen	NPAssn	38	12	6	126	496
Wailuku, 7,319—Maui							
Malulani Hospital	Gen	County	110	50	16	252	2,114

HAWAII—Continued

Hospitals, Sanatoriums and Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Waimea, 2,091—Kauai							
Waimea Hospital▲	Gen	NPAssn	36	23	7	131	812
Waipahu, 6,906—Honolulu							
Oahu Sugar Company Hosp.	Gen	NPAssn	50	...	8	...	...
Tamura Hospital	Gen	Indiv	7	4	3	124	213

PUERTO RICO

Hospitals, Sanatoriums and Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Adjuntas, 3,856—Ponce							
Castaner General Hospital....	Gen	Church	25	18	8	225	990
Aibonito, 4,103—Guayama							
Sanatorio Escolar de Aibonito	TB	Gov't	100	95	..	...	121
Arecibo, 22,132—Arecibo							
Arecibo Charity District Hospital★	Gen	Gov't	284	182	34	501	4,108
Clinica Dr. Susoni............	Gen	Indiv	125	75	13	154	1,603
Bayamon, 14,696—San Juan							
Bayamon District Hosp.★▲◇..	Gen	Gov't	300	232	35	912	5,575
Caguas, 24,378—Guayama							
Clinica San Rafael...........	Gen	Indiv	60	22	6	101	705
Cayey, 5,622—Guayama							
Clinica Font	Gen	Indiv	60	42	..	...	607
Central Aguirre, —Guayama							
Central Aguirre Hospital.....	Gen	NPAssn	26	13	1	17	687
Fajardo, 7,108—Humacao							
Coomb's Hospital	Gen	NPAssn	25	28	8	8	800
Fajardo Charity District Hospital★▲◇	Gen	Gov't	300	193	35	356	4,390
Guayama, 16,910—Guayama							
Tuberculosis Hospital	TB	Gov't	100	100	..	...	169
Hato Rey, —San Juan							
Clinica Dr. M. Julia▲.........	N&M	Corp	250	240	..	...	750
Humacao, 7,624—Humacao							
Clinica Oriente	Gen	Indiv	59	34	5	31	891
Ryder Memorial Hospital....	Gen	Church	52	41	8	203	1,211
Jayuya, 1,808—Ponce							
Catalina Figueras Memorial Hospital	Gen	City	12	8	..	38	496
Juana Diaz, 3,931—Ponce							
Municipal Hospital	Gen	City	42	...	5	...	...
Manati, 6,771—Arecibo							
Manati Municipal Hospital....	Gen	City	50	31	8	102	814
Mayaguez, 50,371—Mayaguez							
Clinica Betances	Gen	Indiv	100	15	10	36	1,191
Mayaguez and Western Polyclinic	Gen	Part	100	...	3	...	...
Tuberculosis Hospital	TB	Gov't	200	190	..	...	381
Ponce, 65,179—Ponce							
Clinica Quirurgica Dr. Pila▲◇	Gen	NPAssn	170	125	21	162	2,766
Hospital Municipal Valentin Tricoche	Gen	City	180	...	12	...	...
Hospital Santo Asilo de Damaso◇	Gen	Church	120	90	20	321	4,307
Insular Blind Asylum.........	Inst	Gov't	200	...	..	...	...
St. Luke's Memorial Hosp.◇..	Gen	Church	80	63	11	125	2,050
Tuberculosis Hospital	TB	Gov't	312	298	..	...	455
Rio Piedras, 19,933—San Juan							
Insular Tuberculosis Sanat.▲	TB	Gov't	800	790	..	...	815
Psychiatric Hospital of Puerto Rico	Ment	Gov't	1,200	1,276	..	...	414
Sanatorio de la Sociedad Espanola de Auxilio Mutuo y Beneficencia de Puerto Rico.	Gen	NPAssn	120	88	15	231	2,130
[illegible] al...	Gen	City	50	40	6	120	3,200
[illegible]							
Municipal Hospital◇	Gen	City	333	231	60	2,588	9,014
Clinica Miramar	Gen	Indiv	100	...	5	...	...
Hospital Diaz Garcia▲◇.....	Gen	Corp	90	51	20	117	2,200
Hospital San Jose............	Gen	Corp	120	63	16	274	1,318
Ophthalmic Institute of Puerto Rico	Eye	Corp	60	30	..	...	2,712
Presbyterian Hospital★▲◇	Gen	Church	108	93	22	637	2,800
Rodriguez General Hospital▲	Gen	Army	150	70	2	8	900
U. S. Public Health Service Hospital▲	Gen	USPHS	92	82	..	...	1,292
University Hospital▲	Gen	Gov't	54	32	2	...	814
Santurce, —San Juan							
Hospital Mimiya	Gen	Indiv	100	43	15	41	900
Trujillo Alto, 1,014							
Hospital for the Lepers......	Lepro	State	72	55	..	...	7
Utuado, 4,430—Arecibo							
Clinica San Miguel...........	Gen	Indiv	70	61	3	15	902

VIRGIN ISLANDS

Hospitals, Sanatoriums and Related Institutions	Type of Service	Ownership or Control	Beds	Average Census †	Bassinets	Number of Births	Admissions †
Charlotte Amalie, 9,801—St. Thomas Island							
Municipal Hospital	Gen	CyCo	100	...	12	...	...
Christiansted, 4,495—St. Croix Island							
Christiansted Municipal Hosp.	Gen	City	66	48	14	95	1,204
St. Croix Hospital for Leprosy	Lepro	City	92	51	..	...	3
Frederiksted, 2,498—St. Croix Island							
Frederiksted Municipal Hosp.	Gen	City	60	45	10	123	1,570

Key to symbols and abbreviations is on page 1091

SCHOOLS FOR X-RAY TECHNICIANS

The American Registry of X-Ray Technicians, which is sponsored by the American College of Radiology, requested the American Medical Association to assume the responsibilities of approving schools for x-ray technicians. A resolution embodying this request was presented to the House of Delegates of the American Medical Association during the 1943 session. Action on the resolution delegated the Council on Medical Education and Hospitals to establish standards of training, inspect schools and publish lists of approved schools. With the advice of the Registry and the College suitable standards were prepared and, during the 1944 session, were accepted by the House of Delegates.

Prior to this time approval was granted by the Registry. All the schools on the 1944 list published by the Registry were surveyed before the standards, or "Essentials" as they are referred to by the Council, were finally adopted. This information as well as that obtained from other schools which were anxious to be approved has been tabulated and made available to the Registry. The first list of schools approved by the Council was printed in THE JOURNAL on Jan. 13, 1945.

The Council has approved 130 schools for x-ray technicians. Each of these schools has been studied in great detail and annual resurveys are made to gather new information. Most of the approved schools admit high school graduates. A total of 84 or 65 per cent belong in this category while 18 or 13 per cent require one year of college work and 16 or 12 per cent have courses based on a prerequisite of two years of college. Only one school indicates that three years of college credits are necessary before the student is accepted. Nurses who have had two years of nurses' training are enrolled by 5 schools while graduate nurses may enter an additional 15 or 11 per cent of the training programs.

The duration of the curriculum is twelve months in 89 schools while 15 specify eighteen months of training and experience. Twenty-one schools present a two-year program; consequently their graduates are eligible for registration examination on completion of the course. All graduates from other schools will need some experience while employed in x-ray departments in addition to the approved course. A minimum of two years of training and experience is required for registration.

Each school reports the maximum enrolment that is consistent with standards, number of instructors, physical space in the department's various divisions and the amount of time available for instruction. In 1945 the maximum capacity of all schools was 620 students or an average of 4.7 per school. This capacity is practically filled by the 615 students enrolled. Only 340 were graduated. The schools indicate that 432 students will complete their training in 1946. This represents an average of 3.3 graduates per school.

Last year the registered hospitals of the United States reported that 119 fewer x-ray technicians were employed on a full time basis than were employed in 1944. The number of part time employees in this category was reduced by 191. In the war years the total number of full time x-ray technicians in hospitals increased from 5,534 in 1941 to 8,115 in 1944. This increased employment of 46.6 per cent can hardly be completely upset by the 119 reduction in 1945. Percentage increases for each year indicate that the peak occurred in 1943 when an increase of 22.7 per cent was reported over the previous year. The increase in 1933, however, was only 3.5 per cent above the previous year. Shortly after the end of the war hospitals reported a decrease of 1.4 per cent of full time x-ray technicians. With further readjustments to peacetime experiences there appears to be little doubt that qualified graduates of approved schools will experience any difficulty in obtaining employment.

Tuition is free in 81 or 62 per cent of the schools. The average tuition is $43. The average tuition reported by 46 schools is $124. Two of these schools list excessively high tuition but return most or all of this amount to the students in the form of stipends during the training period. Only 8 schools charge over $150 for tuition.

One hundred or 76 per cent of the schools present a certificate when students are graduated. A diploma is given as evidence of graduation by 24 schools while 9 do not present any type of certification. College affiliation is maintained by 40 schools but college credits are acquired in only 9. A degree is given at graduation by 4 schools. Seven of the schools present more than one type of certification.

Instructors for the 615 students enrolled include 130 radiologists and 218 full time registered x-ray technicians. This is a ratio of more than one instructor to two students.

Correspondence regarding schools for x-ray technicians should be addressed to the Council on Medical Education and Hospitals. Graduates desiring registration should communicate with the American Registry of X-Ray Technicians, 2900 East Minnehaha Parkway, Minneapolis 6.

APPROVED SCHOOLS FOR X-RAY TECHNICIANS

Council on Medical Education and Hospitals of the American Medical Association

NOTE: Complete details regarding admission to an approved school for x-ray technicians can be obtained by communicating directly with the radiologist. Asterisk (*) after name of school indicates that male as well as female students are admitted.

Name and Location of School	Radiologist in Charge	Entrance Requirements	Length of Training in Months	Maximum Enrolment	Classes Begin	Tuition	Certificate, Diploma, Degree
CALIFORNIA							
Berkeley Hospital, Berkeley *	W. A. Ward, M.D.	High school	12	4	JanAprOct	....	Certificate
California Hospital, Los Angeles *	W. Hiemstra, M.D.	High school	24	2	JanJuly	$ 50	Diploma
College of Medical Evangelists, Los Angeles *	W. L. Stilson, M.D.	1 yr. college	12	6	Every 2 mo.	$100	Certificate
Los Angeles County Hospital, Los Angeles *	R. A. Carter, M.D.	2 yrs.coll.orR.N.	12	6	Every 2 mo.	None	Certificate
Mercy Hospital, Sacramento	J. D. Lawson, M.D.	High school	12	3	JanJuly	None	Diploma

APPROVED SCHOOLS FOR X-RAY TECHNICIANS—Continued

Council on Medical Education and Hospitals of the American Medical Association

Name and Location of School	Radiologist in Charge	Entrance Requirements	Length of Training in Months	Maximum Enrolment	Classes Begin	Tuition	Certificate, Diploma, Degree
COLORADO							
Colorado General Hospital, Denver	E A Schmidt, M D	1 yr college	12	6	Every 2 mo	None	Certificate
St Anthony Hospital, Denver	J S Bouslog M D	1 yr college	12	4	Varies	None	Diploma
St Luke's Hospital, Denver	W Stampfli, M D	High school	12	3	Varies	None	Certificate
CONNECTICUT							
Grace Hospital, New Haven	R M Lowman, M D	High school	12	6	Quarterly	None	Certificate
New Haven Community Hospital, New Haven *	H S Kaplan, M D	1 yr coll or R N	12	2	AprOct	None	Certificate
GEORGIA							
Crawford W Long Memorial Hospital, Atlanta *	W F Lake, M D	2 yrs college	12	4	JanJuly	None	Certificate
Georgia Baptist Hospital, Atlanta *	W F Lake, M D	1 yr college	12	4	JanJuly	None	Diploma
Grady Memorial Hospital, Atlanta *	H S Weens, M D	High school	12	5	Quarterly	None	Certificate
Piedmont Hospital, Atlanta	H S Weens, M D	High school	12	2	Every 6 mo	None	Certificate
University Hospital, Augusta *	L P Holmes, M D	High school	12	10	Varies	None	Certificate
IDAHO							
St Alphonsus Hospital, Boise	A M Popma, M D	1 yr college	18	2	Fall&Spring	$100	Certificate
St Luke's Hospital, Boise	A M Popma, M D	1 yr college	15	2	June	None	Certificate
ILLINOIS							
St Joseph Hospital, Alton *	A A Brewer, M D	High school	18	3	JanAug	$150	Certificate
Chicago	D S Bellin, M D	Coll grad or R N	12	2	Fall&Spring	None	Diploma
ital, Chicago	J F Sammet, M D	1 yr college	12	2	Quarterly	None	Certificate
School of Medicine, Chicago *	G M Landau, M D	High school	12	12	JanJuly	$150	Certificate
icago *	N S Zeitlin M D	High school	12	8	Varies	$200	Certificate
hicago	B C Cushway, M D	2 yrs college	18	2	JanJune	None	
hicago	B C Cushway, M D	1 yr college [a]	18	3	AprOct	None	Certificate
Chicago	R A Arens, M D	1 yr college	18	6	Varies	$ 25	Certificate
o	J Arendt, M D	High school	12	6	FebAug	None	Certificate
Chicago *	R H Warden, M D	High school	24	3	Fall&Spring	None	Certificate
go	B C Cushway, M D	1 yr college [a]	18	3	AprOct	None	Certificate
)	B C Cushway, M D	1 yr college [a]	18	3	AprOct	None	
St Luke's Hospital, Chicago	F L Jenkinson, M D	2 yrs coll or R N	18		Varies	$ 50	Diploma
St Mary of Nazareth Hospital, Chicago *	C Challenger, M D	High school	24	3	Quarterly	None	Certificate
Woodlawn Hospital, Chicago	H A Olin, M D	High school	18	3	Varies	None	Certificate
n	A C Ledoux, M D	High school	12	2	JanJuly	$ 50	Certificate
oria	P B Goodwin M D	High school	12	2	MayDec	$100	Certificate
Illinois, Peoria *	F H Decker, M D	1 yr coll or R N	12	2	Varies	None	
ord	T J Lang, M D	High school	18	4	Fall	$ 25	Diploma
ockford	H W Ackemann, M D	High school	18	2	JanJune	None	Certificate
l *	J E King, M D	High school	12	3	JanJuly	None	Certificate
St John's Hospital, Springfield	W DeHollander, M D	High school	12	4	Quarterly	$ 50	Certificate
INDIANA							
St Catherine's Hospital, East Chicago	B D Braun, M D	High school	12	6	Varies	$100	Diploma
Methodist Hospital, Gary *	J P Bennett, M D	High school	12	2	JanJuly	None	Diploma
St Anthony's Hospital, Terre Haute	H J Pierce, M D	2 yrs coll or R N	12	2	JuneSept	$ 50	Certificate
IOWA							
Mercy Hospital, Cedar Rapids	A W Erskine, M D	2 yrs college	16	2	FebJuly	None	Certificate
University Hospitals Iowa City *	H D Kerr, M D	High school	12	12	Monthly	None	
St Joseph Mercy Hospital, Sioux City *	H M McCuistion, M D	High school	24	2	FebSept	None	Diploma
KANSAS							
University of Kansas School of Medicine, Kansas City	G M Tice, M D	2 yrs college	12	5	Varies	None	Certificate
LOUISIANA							
United States Marine Hospital, New Orleans *	A Mayoral, M D	High school	12	2	JanJuly	None	Certificate
Shreveport Charity Hospital, Shreveport *	G M Riley, M D	High school	18	7	Varies	None	Certificate
MARYLAND							
Baltimore City Hospitals, Baltimore .		High school	24	4	September	None	Certificate
MASSACHUSETTS							
Lahey Clinic, Boston *	H F Hare M D	High school	12	6	JanJune	None	
Massachusetts Memorial Hospitals, Boston	G Levene, M D	High school	12	5	Varies	None	Certificate
Lawrence General Hospital Lawrence *	W C Miller, M D	High school	12	2	JanSept	None	Certificate
St Luke's Hospital, Pittsfield	W G Cross, M D	High school	12	3	MarchOct	None	Diploma
Mercy Hospital, Springfield	A J Horrigan M D	High school	12	2	MarchOct	None	Certificate
St Vincent's Hospital, Worcester	A E O Connell, M D	High school	12	3	JanSept	None	Certificate
MICHIGAN							
Leila Y Post Montgomery Hospital, Battle Creek	G T Patrick, M D	High school	12	2	JanJuly	None	Certificate
Mt Carmel Mercy Hospital, Detroit	J M Grace, M D	2 yrs college	24	6	JuneOct	$100	Cert & B S
St. Mary's Hospital, Detroit *	J E Lofstrom, M D	High school	12	5	September	$125	Certificate
MINNESOTA							
St Luke's Hospital, Duluth	A I Abraham M D	High school [c]	12	6	JanJuly	None	Cert & B S
St Mary's Hospital, Duluth	T R McNutt, M D	2 yrs coll or R N	12	5	MarchSept	None	Diploma
Minneapolis General Hospital, Minneapolis	O Lipschultz M D	High school	12	1	Varies	None	Diploma
St Mary's Hospital, Minneapolis	W H Ude, M D	High school	12	4	AprOct	None	Certificate
Swedish Hospital, Minneapolis	G T Nordin, M D	2 yrs college	24	16	Every 2 mo	$250	Certificate
University of Minnesota Hospitals, Minneapolis *	L G Rigler, M D	2 yrs coll or R N [a]	15	10	Varies	Univ fees	Cert & B S
Bethesda Hospital St Paul *	H O Peterson, M D	High school	12	4	Varies	None	Certificate
Charles T Miller Hospital St Paul *	H O Peterson M D	High school	12	4	Quarterly	None	Certificate
St Joseph's Hospital, St Paul *	L A Nash M D	High school	24	2	Varies	None	.
MISSOURI							
Research Hospital, Kansas City	I H Lockwood M D	1 yr college [a]	12	6	JanJuly	None	Certificate
St Luke's Hospital Kansas City *	L A Scarpellino M D	High school	12	4	Quarterly	$ 25	Certificate
De Paul Hospital, St Louis *	E C Ernst, M D	High school	12	2	Varies	$150	Certificate
St Louis University School of Nursing, St Louis *	L R Sante, M D	High school	4 yrs		Each semester	$250 yr	Dipl & B S
St Mary's Infirmary, St Louis *	W E Allen Jr, M D	High school	24	2	September	None	Certificate

APPROVED SCHOOLS FOR X-RAY TECHNICIANS—Continued

Council on Medical Education and Hospitals of the American Medical Association

Name and Location of School	Radiologist in Charge	Entrance Requirements	Length of Training in Months	Maximum Enrolment	Classes Begin	Tuition	Certificate, Diploma, Degree
NEBRASKA							
Creighton Memorial St. Joseph's Hospital, Omaha	J. F. Kelly, M.D.	High school	24	8	September	$200	Certificate
University of Nebraska College of Medicine, Omaha	H. B. Hunt, M.D.	High school	12	3	JanJuly	$ 75	Diploma
NEW HAMPSHIRE							
Mary Hitchcock Memorial Hospital, Hanover	L. K. Sycamore, M.D.	2yrs.coll.orR.N.	12	2	JanJuly	$ 50	Certificate
Laconia Hospital, Laconia *	A. Oppenheimer, M.D.	2yrs.coll.orR.N.	12	5	Varies	$ 50	Certificate
NEW JERSEY							
Jersey City Medical Center, Jersey City *	H. J. Perlberg, M.D.	High school	12	12	Varies	None	Certificate
NEW YORK							
Albany Hospital, Albany *	W. P. Howard, M.D.	High school	24	6	September	$700 [e]	Certificate
Edward J. Meyer Memorial Hospital, Buffalo *	H. H. Ebberts, M.D.	High school	24	..	July	None	Certificate
New York Hospital, New York *	H. L. Temple, M.D.	High school	18	10	September	$700 [f]	Certificate
New York Polyclinic Med. School and Hosp., New York *	E. E. Smith, M.D.	High school	12	20	October	$350	Certificate
Rochester General Hospital, Rochester *	L. R. Lingeman, M.D.	High school	12	2	FebSept	$120	Certificate
NORTH CAROLINA							
Duke University School of Medicine, Durham *	R. J. Reeves, M.D.	Coll.deg.orR.N.	12	3	MarAugOct	$ 25	Certificate
Watts Hospital, Durham *	W. W. Vaughan, M.D.	High school	12	2	JanJuly	None	Certificate
NORTH DAKOTA							
Trinity Hospital, Minot	W. W. Wall, M.D.	2 yrs. college	12	2	FebSept	None	....
OHIO							
City Hospital, Akron *	F. T. Moore, M.D.	High school	24	4	FebJuly	None	Certificate
Cincinnati General Hospital, Cincinnati *	B. Felson, M.D.	High school	12	3	September	$ 50	Certificate
City Hospital, Cleveland *	H. Hauser, M.D.	High school	12	6	Every 2 mo.	$100	Certificate
Mount Sinai Hospital, Cleveland	H. A. Mahrer, M.D.	High school	12	3	JanMaySept	$100	Diploma
St. Luke's Hospital, Cleveland *	D. D. Brannan, M.D.	High school	12	4	Quarterly	$ 50	Certificate
University Hospitals, Cleveland *	H. Hauser, M.D.	High school	12	8	Every 6 mo.	$100	Certificate
Good Samaritan Hospital, Dayton	H. Snow, M.D.	High school	12	2	AprJulySept	$ 50	Certificate
Miami Valley Hospital, Dayton *	G. A. Nicoll, M.D.	High school	12	3	Quarterly	None	Cert.&B.S.[g]
Huron Road Hospital, East Cleveland *	J. O. Newton, M.D.	High school	12	4	Varies	$100	Diploma
St. Rita's Hospital, Lima *	D. W. English, M.D.	High school	18	3	JanJuly	None	Certificate
Youngstown Hospital, Youngstown	E. C. Baker, M.D.	High school	12	4	Varies	None	Certificate
OKLAHOMA							
St. Anthony's Hospital, Oklahoma City	J. E. Heatley, M.D.	High school	12	3	Fall&Spring	None	Certificate
University Hospitals, Oklahoma City *	J. E. Heatley, M.D.	High school	12	3	June	None	Certificate
St. John's Hospital, Tulsa	S. Pollack, M.D.	High school	24	4	Varies	None	Certificate
OREGON							
University of Oregon Medical School, Portland *	W. Y. Burton, M.D.	High school	12	8	Varies	None	Certificate
PENNSYLVANIA							
Fitzgerald-Mercy Hospital, Darby	F. K. Alexander, M.D.	High school	12	4	JanJuly	None	Certificate
Conemaugh Valley Memorial Hospital, Johnstown *	J. B. Hall, M.D.	R.N.	24	2	Varies	None	....
Grad. Hosp. of the Univ. of Penn., Philadelphia *	A. Finkelstein, M.D.	High school	24	6	September	$150	Certificate
Jefferson Medical College Hospital, Philadelphia *	P. C. Swenson, M.D.	High school	24	8	JanJuly	None	....
Jewish Hospital,	L. Solis-Cohen, M.D.	High school	12	12	Varies	$100	Diploma
Philadelphia Gene	B. P. Widmann, M.D.	High school	14	30	FebSept	None	Diploma
Wilkes-Barre Gene	P. E. Ringawa, M.D.	High school	12	4	Varies	None	Certificate
SOUTH CAROLINA							
Roper Hospital, Charleston *	H. Rudisill Jr., M.D.	1 yr. college	12	8	Quarterly	$100	Certificate
Tuomey Hospital, Sumter *	M. E. Parrish, M.D.	1 yr. college	12	2	Varies	$ 50	Cert.&Dipl.
TENNESSEE							
Knoxville General Hospital, Knoxville	H. H. McCampbell, M.D.	High school	12	3	Varies	None	Certificate
University of Tennessee College of Medicine, Memphis	C. H. Heacock, M.D.	High school	12	4	Quarterly	$ 80	Certificate
Meharry Medical College, Nashville *	L. D. Scott, M.D.	2yrs.coll.orR.N.	18	2	September	$ 75	Certificate
TEXAS							
Hotel Dieu Hospital, Beaumont	L. H. Ledbetter, M.D.	1yr.coll.orR.N.	12	..	JuneSept	None	Certificate
Baylor University Hospital, Dallas *	F. M. Windrow, M.D.	2 yrs. college	12	2	JanJuly	$100	Certificate
Parkland Hospital, Dallas *	M. L. Mazer, M.D.	High school	12	15	Monthly	None	Certificate
St. Paul's Hospital, Dallas *	G. D. Carlson, M.D.	High school	24	6	FebSept	None	Certificate
University of Texas School of Medicine, Galveston *	M. Schneider, M.D.	1 yr. college [a]	12	4	Quarterly	$100	Certificate
St. Joseph's Infirmary, Houston	P. E. Wigby, M.D.	High school	24	4	Varies	None	Certificate
UTAH							
Salt Lake County General Hospital, Salt Lake City *	M. L. Allen, M.D.	High school	12	2	January	None	Cert.&Dipl.
VIRGINIA							
Medical College of Virginia Hosp. Division, Richmond	D. V. Kechele, M.D.	High school	12	6	JanJuneSept	None	Certificate
St. Luke's Hospital, Richmond	J. L. Tabb, M.D.	High school	12	2	JanJune	None	Certificate
WEST VIRGINIA							
Kanawha Valley Hospital, Charleston	W. P. Elkin, M.D.	High school	12	1	February	None	Diploma
McMillan Hospital, Charleston	W. P. Elkin, M.D.	High school	12	1	August	None	Certificate
St. Francis Hospital, Charleston	W. P. Elkin, M.D.	High school	12	1	November	None	Diploma
WISCONSIN							
Madison General Hospital, Madison *	L. V. Littig, M.D.	High school	12	3	JanMaySept	None	Certificate
University of Wisconsin Medical School, Madison *	E. A. Pohle, M.D.	High school	12	16	Varies	Univ.fees	Certificate
Columbia Hospital, Milwaukee	S. A. Morton, M.D.	High school	24	4	Varies	None	Certificate
Evangelical Deaconess Hospital, Milwaukee *	A. Melamed, M.D.	High school	12	4	Quarterly	$100	Certificate
Mount Sinai Hospital, Milwaukee *	I. I. Cowan, M.D.	High school	12	4	Quarterly	$200	Certificate
St. Joseph's Hospital, Milwaukee	A. R. Altenhofen, M.D.	High school	24	10	Varies	$ 35	Certificate

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a. Two years' training in an accredited school of nursing also accepted.
b. Degree from Mercy College, Detroit.
c. Students working for B. S. degree spend three years at Hamline University, St. Paul, and one year at hospital.
d. Students working for B.S. degree are required to spend three years at the University of Minnesota and one year at hospital.
e. Students are paid a monthly stipend of $25 during first year and $30 a month during second year.
f. Students are paid a total stipend of $150 during eighteen months.
g. Students working for B.S. degree are required to spend three years at the University of Dayton and one year at the hospital.

SCHOOLS FOR MEDICAL RECORD LIBRARIANS

The American Association of Medical Record Librarians presented a formal resolution to the 1942 session of the House of Delegates of the American Medical Association requesting the latter to assume the responsibilities of approving schools for medical record librarians. Action on the resolution granted the Council on Medical Education and Hospitals authority to establish standards, inspect training programs and publish lists of approved schools. Minimum essentials were formulated with the assistance of the American Association of Medical Record Librarians after all existing schools were inspected. These essentials were officially accepted by the House of Delegates in 1943. The first list of approved schools was published in June 1943. Currently there are 10 schools on the approved list.

A total of 33 graduates was reported in 1945. This is approximately the yearly average experience of all schools since 1941 although this last year three of the schools did not have any students. Current enrolments indicate that 31 students will be graduated in the calendar year of 1946. Continued emphasis must be placed on enlarging classes so that hospitals can employ qualified personnel.

In the war years since 1941 publicity for enrolment of prospective students has necessarily benefited other groups. However, hospitals reported in this same period that an additional 1,146 medical record librarians have been employed on a full time basis. When this number is compared with the 178 graduates of the approved schools during the same period, it is quite evident that hospital administrators cannot acquire adequately trained personnel in sufficient numbers. The total graduates since 1941 represent less than 15 per cent of the additional medical record librarians employed on a full time basis. With the return to peacetime standards the necessity of adequate qualifications for all hospital personnel will be stressed. Consequently graduates of the approved schools will experience even greater opportunities of employment.

The large number of inadequately trained individuals working in record departments also presents additional problems. These workers need instruction in the various branches of their new employment. To cope with this problem of improving their efficiency a series of intensive, one week, in-service training programs is being evolved. Two institutes have been presented lately and many more are envisioned. It is anticipated that a series of 70 or more of these in-service training programs will develop in the near future for the benefit of hospitals and the workers who are at present poorly qualified in medical record library science. Obviously such a program will result in benefits for physicians and the public as well as others who must deal with medical records.

Some of the currently employed workers in record departments will desire a longer period of training. Hospitals can aid in such endeavors by granting leaves of absence to experienced though untrained workers for short refresher courses offered by six of the 10 approved schools. These programs vary in length but are usually designed to cover much of the didactic material included in the undergraduate curriculum. Six weeks to four months devoted to these studies and supervised practice are available. Tuition for short courses was not reported but is understood to be moderate.

Undergraduate instruction continues to develop small classes. The present enrolment indicates that only three schools have more than five students. The maximum capacity of the schools has been increased somewhat so that now 101 students could be trained without overcrowding. An additional school has been started but is not yet sufficiently advanced in its first year of instruction for inspection and approval. When the new school is recognized a revision of average class size and maximum capacity will be necessary.

Entrance requirements of the approved schools are designed for high school graduates in three instances but the training program is integrated with a four year college curriculum. Other courses are open to persons having completed two years of college or acceptable nurses' training. One school limits its enrolment to college graduates. Students who do not enter the four year course are required to be proficient in typing and shorthand. All courses not integrated in a college curriculum are twelve months in length.

Tuition varies from $100 to $250 a year with $125 remaining the most common. The average tuition of all schools is $153 while the mean average is approximately $140.

College credits are obtained in four schools while the student is pursuing the prescribed curriculum. A degree is presented by three schools while all others grant a certificate or diploma when the course is completed.

Correspondence regarding registration should be addressed to the American Association of Medical Record Librarians, 18 East Division Street, Chicago 10.

APPROVED SCHOOLS FOR MEDICAL RECORD LIBRARIANS

Council on Medical Education and Hospitals of the American Medical Association

Name and Location of School	College Affiliation	Length of Course	Classes Start	Entrance Requirements*	Tuition	Certificate, Diploma, Degree	Maximum Enrolment
Samuel Merritt Hospital, Oakland, Calif.	None	12 mos.	JanAug	2yrs.coll.or R.N.	$125	Diploma	6
Grant Hospital, Chicago	None	12 mos.	FebSept	2yrs.coll.or R.N.	$125	Certificate	8
St. Joseph Hospital, Chicago	DePaul University	12 mos.	FebSept	2yrs.coll.or R.N.	$125	Diploma	8
Massachusetts General Hospital, Boston	None	12 mos.	FebSept	2yrs.coll.or R.N.	$125	Certificate	3
Mercy College, Detroit	Mercy College	4 yrs.	FebSept	High school	$150 yr.	Dipl.&Degree	12
College of St. Scholastica, Duluth, Minn.	College of St. Scholastica	†	Sept	High school	$130 yr.	Degree	10
St. Louis University, St. Louis	St. Louis University	4 yrs.	JanSept	High school	$250 yr.	Degree	15
Rochester General Hospital, Rochester, N. Y.	None	12 mos.	JanSept	2yrs.coll.or R.N.	$150	Certificate	10
Duke Hospital, Durham, N. C.	Duke University	12 mos.	Varies	Degree	$150	Certificate	12
Graduate Hosp. of the Univ. of Penn., Philadelphia	University of Pennsylvania	12 mos.	Sept	2yrs.coll.or R.N.	$200	Certificate	16

* All students are required to be proficient in typing and shorthand. † Four academic years and one summer session.

SCHOOLS FOR OCCUPATIONAL THERAPY TECHNICIANS

At the 1933 session of the House of Delegates of the American Medical Association a resolution was introduced that some plans be effected for the establishment of standards, ratings and inspections of training schools for occupational therapy technicians. This program was referred to the Council on Medical Education and Hospitals, and all of the 13 existing schools were surveyed. The Essentials of an Acceptable School of Occupational Therapy were ratified by the House of Delegates of the American Medical Association at the Atlantic City session in 1935, such standards to become effective on Jan. 1, 1939. A report of the Council on Medical Education and Hospitals to the House of Delegates in 1936 contained the names of 4 schools which had already met these standards. There are currently 18 schools on the approved list.

Graduates in 1945 totaled 505 representing 209 regular course, 50 advanced standing and 246 war emergency students. Many of the latter received their didactic training last year and were therefore reported at that time but supervised practice extended into the current year. Certificates were not presented until a satisfactory amount of supervised practice was completed. Eight schools participated in the rapid instruction given to approximately 600 specially selected students who had exceptional background and 5 of these schools still are responsible for determining that their students obtain satisfactory instruction and practice in army hospitals. In the emergency classes extending into 1946 it is expected that 220 additional students will be able to receive their certificates.

The maximum capacity reported this year is very much smaller than last year, since the emergency courses have been discontinued. Now approximately 546 students can be trained in the senior year of the regular course and 106 in the advanced standing group. Graduating classes represented 45 per cent of the capacity of approved schools.

A record number of graduates is expected in 1946 when 467 therapists will be produced in both regular and advanced standing courses. Comparative figures for previous years included 277 in 1944 and 259 in 1945. The war emergency students who will be eligible for certificates in 1946 will bring the total graduates for this period to 687. These new therapists should experience little difficulty in obtaining satisfactory positions owing to the large demand in veteran hospitals, rehabilitation centers and the anticipated expansion in civilian hospitals. An additional 636 full time occupational therapists were reported by hospitals in 1945.

All of the approved schools are now affiliated with senior colleges or universities and all which are located in the United States offer college credit for certain undergraduate courses. All of the four and five year curriculums which are open to high school graduates are arranged to entitle the student to a bachelor degree. Three year courses, which are available for students who have completed one or two years of college, might offer as much as 72 semester credits for subjects included in the prescribed curriculum.

Tuition varies from $21 a year to $450 while the mean average is $200. The lower tuition fees are reported by state supported colleges and therefore might be increased for nonresidents of the state.

Required supervised practice in prescribed fields of occupational therapy necessitates clinical affiliations.. A total of 266 affiliations are reported but several of the schools arrange to send their students to the same outstanding clinical centers. However, one school reports 44 affiliations and another lists 31.

APPROVED SCHOOLS FOR OCCUPATIONAL THERAPY TECHNICIANS

Council on Medical Education and Hospitals of the American Medical Association

NOTE: The duration of the course is expressed in academic years and in most schools the accelerated curriculum is being followed.

Name and Location of School	College Affiliation	Duration of Course	Classes Start	Entrance Requirements	Tuition per Year	Certificate, Diploma, Degree	Graduates in 1945
University of Southern California, 3551 University Ave., Los Angeles	University of Southern California	2 yrs	Sept	Degree	$330	Certificate	8
		5 yrs	FebSept	High sch.	$330	Cert & B S.	
Mills College, Oakland, Calif...	Mills College	3 yrs.	FebSept	Degree	$200	Certificate	4
		5 yrs.	FebSept	High sch.	$450	Cert.&Deg.	
San Jose State College, San Jose, Calif..............	San Jose State College.... ..	3 yrs.	JanOct	1 yr. coll.	$ 21	Certificate	1
		5 yrs	Varies	High sch.	$ 21	Degree	
University of Illinois College of Medicine, 1853 W. Polk St., Chicago	University of Illinois.........	4½ yrs.	Varies	High sch.	$ 80	B S.	None
University of Kansas, Lawrence......................	University of Kansas....	2 yrs.	FebSept	Degree	$ 50	Certificate	1
		4 yrs.	FebSept	High sch.	$ 50	B S.	
Boston School of Occupational Therapy, 7 Harcourt St., Boston	Tufts College	2 yrs.	Sept	Degree	$400	Diploma	41
		3 yrs.	JulySept	1 yr coll.	$400	Diploma	
		5 yrs.	Sept	High sch.	$400	Dipl & B S	
Kalamazoo School of Occupational Therapy, Western Michigan College of Education, Kalamazoo	Western Michigan College of Education	2 yrs.	July	Degree	$ 51	Certificate	20
		4 yrs.	FebSept	1 yr. coll	$ 95	Cert &Deg.	
Michigan State Normal College, Ypsilanti...... .	Michigan State Normal College and Univ. of Michigan	5 yrs.	Varies	High sch.	$ 67	Cert &Deg.	8
St. Louis School of Occupational and Recreational Therapy, 4567 Scott Ave., St. Louis	Washington University	3 yrs.	Sept	2 yrs. coll.	$250	B S.	13
University of New Hampshire, Durham	University of New Hampshire	5 yrs.	Sept	High sch.	$160	Cert.&Deg.	5
Columbia University College of Physicians and Surgeons, 630 W. 168th St., New York City	Columbia University	2 yrs.	Sept	Degree	$450	Certificate	18
		3 yrs.	Sept	2 yrs coll.	$450	B S.	
New York University School of Education, 100 Washington Sq E., New York City	New York University...... ...	4½ yrs.	Quarterly	High sch.	$450	Cert.&Deg.	13
Ohio State University, Columbus.........	Ohio State University.........	4½ yrs.	Quarterly	High sch.	$ 80	B S	11
Philadelphia School of Occupational Therapy, 419 S 19th St., Philadelphia	University of Pennsylvania...	2 yrs.	Sept	Degree	$400	Diploma	45
		3 yrs.	Sept	1 yr. coll.	$400	Diploma	
		5 yrs.	Varies	High sch.	$400	Dipl & B S.	
Richmond Professional Institute, 901 W. Franklin St., Richmond, Va.	College of William and Mary	2½ yrs.	Sept	Degree	$200	Certificate	4
		3 yrs.	Sept	1 yr. coll	$200	Diploma	
Milwaukee-Downer College, Dept. of Occupational Therapy, 2512 E. Hartford, Milwaukee	Milwaukee Downer College....	3 yrs.	Sept	1 yr. coll	$250	Diploma	15
		5 yrs.	Sept	High sch	$250	Dipl & B S.	
Mount Mary College, 2900 Menomonee River Dr., Milwaukee	Mount Mary College..........	5 yrs.	Sept	High sch.	$210	B S	7
University of Toronto, Dept. of University Extension, Toronto, Ont., Canada	University of Toronto........	3 yrs.	Sept	1 yr. coll	$175	Diploma	40

SCHOOLS FOR PHYSICAL THERAPY TECHNICIANS

The House of Delegates of the American Medical Association in 1934 requested that some plan be effected for the establishment of standards, ratings and inspections of schools for the training of physical therapy technicians The Council on Medical Education and Hospitals assumed responsibility for this program and by 1936 had completed a survey of these schools Certain minimum standards were formulated These were presented to the House of Delegates of the American Medical Association and were ratified in May 1936 The first published list of 13 approved schools appeared in THE JOURNAL in August 1936

Last year there were 32 approved schools training physical therapists All of the Army and two of the civilian schools have discontinued their courses so that now there are 21 offering acceptable training Furthermore the emergency courses have recently been discontinued These courses presented all the didactic instruction before students were transferred to army units where acceptable supervised experience could be obtained On completion of the required experience these students will be certified

The 786 graduates in 1945 established a new record In 1946 there will be approximately 752 graduates This estimate includes the emergency course students referred to and 18 navy nurses who are being given approved training somewhat similar to the emergency course

The maximum capacity of the 21 currently approved schools totals 480 students, but these same schools plan to graduate 483 therapists A few schools are graduating more students than their reported capacity

Six courses are designed for high school graduates who will need four years of training Practically all schools will admit nurses and physical education majors Three or four years of college work fulfil the entrance requirements in all but two of the approved schools for physical therapy technicians

Tuition is free in one school while in other centers it closely parallels university fees The average tuition is $208 and the mean is $200 In 1946 it is expected that all schools will have completed college affiliations Physical therapy courses are presented on the collegiate level and carry semester credits in 14 schools Nine schools issue a degree and the remainder present a certificate or diploma when the curriculum has been completed

APPROVED SCHOOLS FOR PHYSICAL THERAPY TECHNICIANS

Council on Medical Education and Hospitals of the American Medical Association

Name and Location of School	Medical Director and Technical Director	Entrance Requirements*	Duration of Course	Time of Admission	Maximum Enrolment	Tuition	Certificate, Diploma Degree
Children's Hospital, Los Angeles ¹	Samuel Mathews, M D Miss Roxie Morris	a b c	14 mos	Sept	14	$200	Diploma
College of Medical Evangelists, Los Angeles ¹	Fred B Moor, M D A H Carlson	a b c	12 mos	Sept	20	$225	Cert or Dipl
University of California Hospital, San Francisco ¹	Frances Baker, M D Miss Margery L Wagner	a b e	12 mos	March Sept	10	$150	Certificate
Stanford University, Stanford University, Calif ¹	W H Northway, M D Miss Lucille Daniels	a b d	10 mos	Quarterly	16	$400	Cert or Degree
Northwestern University Medical School, Chicago	John S Coulter, M D Miss Gertrude Beard	a b d	12 mos	July Oct	16	$500	Certificate
State University of Iowa Medical School, Iowa City	W D Paul, M D Miss Olive C Farr	b c	9 mos	March Sept	25	None	Certificate
University of Kansas School of Medicine, Kansas City ¹	G M Martin M D Miss Ruth G Monteith	a b c²	10 mos	Feb Sept	20	$[illegible]50³	Cert or Degree
Bouvé Boston School of Physical Education, Boston	Arthur L Watkins, M D Miss Constance K Greene	c⁴	10 mos	Sept	15	$[illegible]50⁵	Cert or Degree
Harvard Medical School, Boston	James W Sever, M D Miss Janet B Merrill	a b d	9 mos	Varies	22	$200	Certificate
Boston University College of Physical Education for Women, Sargent College, Cambridge, Mass	Louis Howard, M D Miss Adelaide L McGarrett	H S	4 yrs	Sept	20	Varies	Cert or Degree
University of Minnesota, Minneapolis ¹	M E Knapp M D Miss Sara Kollman	c	12 mos	June	24	$200³	Certificate
Barnes Hospital, St Louis	F H Ewerhardt, M D Miss Beatrice F Schulz	a b c	9 mos	Oct	12	$200	Certificate
St Louis University School of Nursing St Louis ¹	A J Kotkis, M D Sister Mary Imelda	a²	10 mos	Jan Sept	12	$[illegible]0 yr	Cert or Degree
Columbia University, College of Physicians and Surgeons, New York City ¹	William B Snow, M D Miss Josephine L Rathbone	a c⁶	2 yrs	Sept	35	$400 yr	Cert or Degree
New York University School of Education New York City ¹	George G Deaver, M D Miss Elizabeth C Addoms	a b c	[illegible] mos	Sept	40	$150	Cert & Degree
Duke Hospital, Durham, N C ¹	Lenox D Baker M D Miss Helen Kaiser	a b c	12 mos	Oct	12	$[illegible]00	Certificate
D T Watson School of Physiotherapy, Leetsdale Pa ¹	Jessie Wright, M D Miss Kathryn Kelley	a b d	12 mos	Oct	30	$[illegible]00	Dipl or Degree
Graduate Hosp of the Univ of Pennsylvania, Phila ¹	G M Piersol M D Miss K Sutherland	a b c	12 mos	Sept	20	$[illegible]0	Certificate
University of Texas School of Medicine, Galveston ¹	G W N Eggers M D Miss Ruby Decker	a b c	9 mos	Jan	6	$110	Certificate
Baruch Center of Physical Medicine of the Medical College of Virginia, Richmond, in affiliation with Richmond Professional Institute ¹	F A Hellebrandt M D J J Buchanan M D	a b c²	12 mos †	Sept	20	$200	Cert or Degree
University of Wisconsin Medical School, Madison ¹	Elizabeth Grimm M D Miss Margaret A Kohli	a b c²	12 mos	Sept	20	$[illegible]³	Cert or Degree

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* Courses are so arranged that any of the entrance requirements will qualify students for training a = Graduation from accredited school of nursing b = Graduation from accredited school of physical education, c = Two years of college with science courses d = Three years of college with science courses, e = Four years of college with science courses H S = High school graduation

† Currently eighteen Navy nurses are enrolled in a six month emergency course

1 Male students are admitted

2 High school graduates admitted to four year course leading to degree

3 Nonresidents charged additional fee

4 High school graduates admitted to four year course leading to degree from Tufts College

5 Tuition for degree course is $400 per year

6 College graduates admitted to twelve month certificate course

SCHOOLS FOR CLINICAL LABORATORY TECHNICIANS

The original survey of 196 schools for clinical laboratory technicians was published in THE JOURNAL, Aug. 29, 1936 together with the first list of 96 approved schools. Essentials had been formulated by the Council on Medical Education and Hospitals of the American Medical Association with the cooperation of the American Society of Clinical Pathologists and ratified by the House of Delegates of the American Medical Association in May 1936.

Currently 268 schools are approved for the training of clinical laboratory technicians. This represents an increase of 12 since last year. The increase in schools resulted in a small number of additional graduates in 1945, but the average graduates per school remains 3.7, the same that was reported for 1944. In previous years the average number of graduates per school was 4.2 in 1943, 4.4 in 1942 and 5.2 in 1941. The demand for clinical laboratory technicians by hospitals is beginning to decline. Reports from all registered hospitals indicate that only 33 more full time clinical laboratory technicians were employed in 1945 than in the previous year. Increased employment for the other war years was 20 to 80 times this figure. There is little danger, however, that the 984 graduates this year will have difficulty in finding employment, owing to the extra demands for technicians by physicians, industry and clinics.

The maximum capacity continues to increase with the approval of more schools while the average number of graduates per school declines. This year reports indicate that 1,932 students could be trained, approximately twice the graduating class. In 1943 when a peak class of 1,034 technicians was produced the maximum capacity was 1,783 while in 1941 the capacity was 1,254.

According to reports of present enrolment and the estimates of the schools there will be 1,125 graduates in 1946. Practically speaking the number will be somewhat smaller and may equal the current year's report. Applications for training continue to be numerous but many prospective students have not completed the necessary required basic collegiate courses for the year of hospital training, instruction and supervised experience. Most of the schools are referring their excess of qualified applicants to other approved schools in an effort to fill all the classes.

Entrance requirements of two years of college including biology and chemistry through quantitative analysis are accepted by 69 per cent of the schools. Three years of college are required by 43 or 16 per cent of the schools while 37 schools limit their enrolment to students who have completed four years of college studies.

Affiliations exist between 126 of the approved schools and an accredited college. Classes are presented on the collegiate level in most of these schools since 92 per cent having college affiliation also obtain college credits for their students. These credits vary from a few semester hours to a sizable number for work performed in the hospital training program.

Courses are designed for twelve months in 229 or 86 per cent of the schools. Eighteen months of training is outlined in 24 schools while 10 present two years of instruction and supervised experience. Nine schools have a fifteen month course. On completion of the training program the student is granted a certificate or diploma by most schools, but 68 offer a degree, while 27 or 10 per cent do not present any type of certification.

Tuition is free in 152 or 57 per cent of the schools. University fees are charged by 28 and only 7 other schools list fees above $150. Excluding university fees the average tuition is $38 per school while the average of the tuitions listed is $104. In the range of tuition other than university fees the most common are 31 charging $100, 16 listing $50, 11 reporting $150 and 7 requiring a tuition of $75. Breakage fees are charged by several schools in addition to tuition.

Correspondence regarding schools for the training of clinical laboratory technicians should be addressed to the office of the Council on Medical Education and Hospitals. Graduates of approved schools desiring registration should communicate with the Board of Registry of Medical Technologists, Ball Memorial Hospital, Muncie, Ind.

APPROVED SCHOOLS FOR CLINICAL LABORATORY TECHNICIANS

Council on Medical Education and Hospitals of the American Medical Association

**NOTE: Under "Tuition" the letter B indicates that a breakage fee is charged; the letter U indicates university fees.
Students lacking the scholastic requirements should contact the registrar of the college or university and not the hospital. Those who wish to enroll in a course given by the college or university or who desire to transfer their credits should correspond with the registrar and not the hospital.**

Name and Location of School	College Affiliation	Pathologist in Charge	Minimum Prerequisite College	Length of Training in Months	Maximum Enrolment	Classes Begin	Tuition
ALABAMA							
Baptist Hospital, Birmingham [a]	Alabama Coll.[b]; Howard Coll.[b]	A. E. Casey, M.D.	3½ yrs.	12	6	Varies	None
Jefferson and Hillman Hospitals, Birmingham [a]	Univ. of Alabama School of Medicine.	R. R. Kracke, M.D.	3 yrs.	12	18	Quarterly	None
Norwood Hospital, Birmingham [a]		J. A. Cunningham, M.D.	2 yrs.	12	4	Jan.June	None
South Highlands Infirmary, Birmingham		J. A. Cunningham, M.D.	2 yrs.	12	3	Jan.June	None
St. Margaret's Hospital, Montgomery [a]	Huntingdon College [b]	C. R. Lafferty, M.D.	4 yrs.	12	2	Jan.July	B
ARIZONA							
St. Joseph's Hospital, Phoenix [a]	Arizona State Teachers Coll. (Tempe)[b]	O. O. Williams, M.D.	3 yrs.	12	4	July	$125
ARKANSAS							
University Hospital, Little Rock [a]	Univ. of Arkansas School of Med.[b]	R. H. Rigdon, M.D.	2 yrs.	12	4	Fall	$100
CALIFORNIA							
Berkeley Hospital, Berkeley [a]		W. W. Reich, M.D.	Degree	12	4	Jan.July	....
Children's Hospital, Los Angeles		R. E. Knutti, M.D.	Degree	12	6	Varies	None
Los Angeles County Hospital, Los Angeles [a]		E. M. Butt, M.D.	Degree	14	14	Varies	None

APPROVED SCHOOLS FOR CLINICAL LABORATORY TECHNICIANS—Continued

Name and Location of School	College Affiliation	Pathologist in Charge	Minimum Pre-requisite College	Length of Training in Months	Maximum Enrolment	Classes Begin	Tuition
CALIFORNIA—Continued							
St. Vincent's Hospital, Los Angeles		J. E. Kahler, M.D.	Degree	12	3	Varies	B
White Memorial Hospital, Los Angeles [a]	College of Medical Evangelists [b]	O. B. Pratt, M.D.	2 yrs.	12	8	Quarterly	$100
Collis P. and Howard Huntington Memorial Hospital, Pasadena		A. G. Foord, M.D.	3 yrs.	12	9	July	B
Univ. of California Med. School, San Francisco [a]	University of California	J. Hopper Jr., M.D.	3 yrs.	12	6	MarSept	None
St. John's Hospital, Santa Monica [a]		G. J. Hummer, M.D.	Degree	12	2	Varies	None
COLORADO							
Colorado General Hospital, Denver [a]	University of Colorado [b]	E. R. Mugrage, M.D.	3 yrs.	12	16	Summer	U&B
Denver General Hospital, Denver		F. McConnell, M.D.	2 yrs.	12	12	Varies	None
Mercy Hospital, Denver [a]		P. Hillkowitz, M.D.	3 yrs.	12	2	Quarterly	U&I
St. Anthony's Hospital, Denver [a]	University of Denver [b]; Loretto Heights College [b]	P. Hillkowitz, M.D.	3 yrs.	12	2	Quarterly	U&I
St. Joseph's Hospital, Denver [c]	St. Mary College (Xavier, Kan.)	E. I. Dobos, M.D.	2 yrs.	12	2	June	None
CONNECTICUT							
Danbury Hospital, Danbury [a]		R. A. Fox, M.D.	2 yrs.	12	3	Varies	None
New Britain General Hospital, New Britain		P. D. Rosahn, M.D.	Degree	12	5	Sept	None
Waterbury Hospital, Waterbury		J. O. Collins, M.D.	2 yrs.	12	3	Varies	$75
DELAWARE							
Wilmington General Hospital, Wilmington [a]		O. J. Pollak, M.D.	2 yrs.	12	2	July	None
DISTRICT OF COLUMBIA							
Doctors Hospital, Washington [a]	American University [b]	O. B. Hunter, M.D.	2 yrs.	12	4	Quarterly	None
Garfield Memorial Hospital, Washington [a]		J. W. Lindsay, M.D.	2 yrs.	12	6	Varies	None
George Washington Univ. Hosp., Washington	George Washington Univ. Med. Sch.	R. M. Choisser, M.D.	2 yrs.	12	6	Quarterly	None
Providence Hospital, Washington		H. H. Leffler, M.D.	2 yrs.	12	4	Varies	None
Sibley Memorial Hospital, Washington [a]	American University [b]	O. B. Hunter, M.D.	2 yrs.	12	4	Quarterly	None
FLORIDA							
Florida State Hospital, Chattahoochee [a]	Florida State College for Women [b]	E. H. Ruediger, M.D.	3 yrs.	12	4	Varies	None
James M. Jackson Memorial Hospital, Miami [a]		Ph. R. Rezek, M.D.	Degree	12	7	Varies	None
GEORGIA							
Crawford W. Long Memorial Hospital, Atlanta [a]		J. Funke, M.D.	2 yrs.	12	2	Varies	None
Georgia Baptist Hospital, Atlanta		J. Funke, M.D.	2 yrs.	12	2	Varies	None
Grady Memorial Hospital, Atlanta		F. P. Parker, M.D.	2 yrs.	12	8	Varies	None
Piedmont Hospital, Atlanta		W. B. Matthews, M.D.	Degree	12	4	Quarterly	None
University Hospital, Augusta [a]	Univ. of Georgia School of Medicine	E. R. Pund, M.D.	2 yrs.	12	2	Sept	$100B
Emory University Hospital, Emory University	Emory University	F. P. Parker, M.D.	2 yrs.	12	8	Varies	None
ILLINOIS							
St. Joseph's Hospital, Bloomington [a]		B. Markowitz, M.D.	2 yrs.	12	2	Varies	$ 25
City of Chicago Municipal Tuberculosis Sanitarium, Chicago [a]		H. C. Sweany, M.D.	2 yrs.	15	16	Quarterly	B
Michael Reese Hospital, Chicago		K. M. Howell, M.D.	2 yrs.	12	12	Monthly	$100
Mt. Sinai Hospital, Chicago [a]		I. Davidsohn, M.D.	2 yrs.	12-18	13	Varies	$170B
Northwestern Univ. Medical School, Chicago	Northwestern University Med. Sch. [b1]	O. E. Hepler, M.D.	2 yrs.	12	12	Monthly	$ 50
Provident Hospital, Chicago [a]		A. O. Webb, M.D.	2 yrs.	12	7	Varies	$100
St. Bernard's Hospital, Chicago [a]		S. S. Snider, M.D.	2 yrs.	12	8	Monthly	$100B
U. S. Marine Hospital, Chicago [a]		H. Conti, M.D.	2 yrs.	12	1	Varies	None
University of Illinois College of Med., Chicago [a]	University of Illinois [b]	G. A. Bennett, M.D.	Degree	12	8	Oct	U
Evanston Hospital, Evanston		J. C. McCarter, M.D.	Degree	12	4	JanJuly	$ 50
St. Francis Hospital, Evanston [a]		L. F. Bleyer, M.D.	2 yrs.	12	5	AprSept	$ 50
Methodist Hospital of Central Illinois, Peoria [a]		R. H. Fuller, M.D.	2 yrs.	12	3	Varies	$ 50B
St. Francis Hospital, Peoria [a]		J. E. Kraus, M.D.	2 yrs.	12	7	Varies	$100B
Rockford Memorial Hospital, Rockford		W. Bissell, M.D.	2 yrs.	12	..	July	B
St. Anthon[illegible] Rockford [a]		A. R. K. Matthews, M.D.	2 yrs.	15	6	Varies	$ 25
St. John's [illegible]		H. M. Steen, M.D.	2 yrs.	12	12	Sept	$ 50
St. Therese [illegible]	DePaul University	G. J. Rukstinat, M.D.	2 yrs.	12	8	Sept	$100B
INDIANA							
Indiana University Med. Center, Indianapolis [a]	Indiana University [b]	J. L. Arbogast, M.D.	2 yrs.	12	15	Varies	U
Methodist H[illegible]	Butler University [b]; Franklin Coll. [b]	H. M. Banks, M.D.	2 yrs.	12	5	Varies	None
St. Elizabet[illegible]		F. P. Hunter, M.D.	2 yrs.	12	6	JuneOct	None
[illegible] Bend South Bend [illegible]		A. S. Giordano, M.D.	2 yrs.	18	3	JanSept	$125
IOWA							
Mercy Hospital, Cedar Rapids		R. E. Weland, M.D.	2 yrs.	12	3	JanJune	B
St. Luke's Methodist Hospital, Cedar Rapids	Coe College	F. W. Mulsow, M.D.	2 yrs.	12	2	JanJune	None
St. Joseph Mercy Hospital, Sioux City		A. C. Starry, M.D.	2 yrs.	12	4	JuneSept	None
KANSAS							
Bethany Hospital, Kansas City		W. W. Summerville, M.D.	2 yrs.	12	2	FebJuly	None
Providence Hospital, Kansas City [a]		W. W. Summerville, M.D.	Degree	12	2	JanJuly	None
University of Kansas Hospitals, Kansas City	Univ. of Kansas Graduate School [b]	H. R. Wahl, M.D.	Degree	12	15	JanJuly	None
St. Francis Hospital, Wichita	University of Wichita [b]	C. A. Hellwig, M.D.	2 yrs.	12	10	FebSept	$150
Wichita Hospital, Wichita [a]		L. C. Murphy, M.D.	2 yrs.	12	6	JuneSept	$150B
KENTUCKY							
Good Samari[illegible] Lexington [a,c]	University of Kentucky [b]	E. S. Maxwell, M.D.	3 yrs.	12	20	Quarterly	U&B
St. Joseph's [illegible]	Nazareth College [b]	E. S. Maxwell, M.D.	3½ yrs.	12	4	JanSept	$150B
Kentucky Sta[illegible] Laboratory, Louisville [a]		L. H. South, M.D.	2 yrs.	12	30	Varies	$200
Norton Memorial Infirmary, Louisville [a]		E. S. G. Waters, M.D.	2 yrs.	12	4	Quarterly	$150
St. Joseph's Infirmary, Louisville	Nazareth College [b]	S. H. Black, M.D.	2 yrs.	12	5	Sept	None
SS. Mary and Elizabeth Hospital, Louisville	Nazareth College [b]	S. H. Black, M.D.	2 yrs.	12	3	Sept	$120B
LOUISIANA							
Charity Hospital, New Orleans [a]		E. S. Moss, M.D.	Degree	12	15	Monthly	None
Mercy Hosp.—Soniat Memorial, New Orleans [a,c]	Loyola University	G. H. Hauser, M.D.	Degree	12	4	Varies	None
U. S. Marine Hospital, New Orleans [a]		J. M. Lubitz, M.D.	2 yrs.	12	3	Varies	None
T. E. Schumpert Memorial Sanit., Shreveport [a]	Northwestern State College [b]	W. P. Butler, M.D.	2 yrs.	12	3	Varies	$ 50
Shreveport Charity Hospital, Shreveport [a]		W. R. Mathews, M.D.	2 yrs.	12	4	JanSept	None

APPROVED SCHOOLS FOR CLINICAL LABORATORY TECHNICIANS—Continued

Name and Location of School	College Affiliation	Pathologist in Charge	Minimum Prerequisite College	Length of Training in Months	Maximum Enrolment	Classes Begin	Tuition
MAINE							
Eastern Maine General Hospital, Bangor [a]	University of Maine [b]	L. S. Lippincott, M.D.	2 yrs.	18	6	Varies	$150B
Central Maine General Hospital, Lewiston	Colby College [b]	J. Gottlieb, M.D.	2 yrs.	12	8	Varies	$100
Maine General Hospital, Portland		J. E. Porter, M.D.	2 yrs.	12	6	July	None
MARYLAND							
Mercy Hospital, Baltimore [a]		H. T. Collenberg, M.D.	2 yrs.	18	16	Varies	$100B
St. Joseph's Hospital, Baltimore [a]	Coll. of Notre Dame of Maryland	H. L. Wollenweber, M.D.	2 yrs.	12	6	JuneSept	B
Union Memorial Hospital, Baltimore [a]		W. C. Merkel, M.D.	2 yrs.	12	5	Varies	$145
MASSACHUSETTS							
Faulkner Hospital, Boston [c]	Simmons College [b]	J. B. Hazard, M.D.	Degree	12	2	JanSept	U
Massachusetts Memorial Hospitals, Boston [a]	Simmons College [b]	C. S. Keefer, M.D.	2 yrs.	12	6	FebSept	None
New England Hospital for Women and Children, Boston	Colby Junior College [b]	G. L. Muller, M.D.	2 yrs.	12	3	JulySept	B
Salem Hospital, Salem		D. A. Nickerson, M.D.	Degree	12	2	July	None
Mercy Hospital, Springfield		J. Rini, M.D.	2 yrs.	12	6	Quarterly	None
Taunton State Hospital, Taunton [a]		H. N. Naumann, M.D.	2 yrs.	12	4	July	None
Tewksbury State Hospital and Infirmary, Tewksbury		H. S. Glidden, M.D.	2 yrs.	12	2	Varies	None
Worcester City Hospital, Worcester [a]		G. D. Kaneb, M.D.	2 yrs.	12	6	Varies	None
Worcester State Hospital, Worcester [a]		W. Freeman, M.D.	2 yrs.	12	4	Varies	None
MICHIGAN							
University Hospital, Ann Arbor [a,c]	University of Michigan [b]	F. H. Bethell, M.D.	3 yrs.	12	16	Varies	$200B
Leila Y. Post Montgomery Hosp., Battle Creek		G. W. Schelm, M.D.	Degree	12	5	FebJune	B
Mercy Hospital, Bay City [a]		W. G. Gamble Jr., M.D.	2 yrs.	12	3	Varies	$100
Chas. Godwin Jennings Hospital, Detroit [c]	Wayne University [b]	M. E. Maun, M.D.	3 yrs.	12	2	Varies	U
City of Detroit Receiving Hospital, Detroit	Wayne University [b]	O. A. Brines, M.D.	3 yrs.	12	12	JanJuly	$100
Grace Hospital, Detroit	Wayne University [b]	C. I. Owen, M.D.	Degree	12	8	Varies	None
Henry Ford Hospital, Detroit	Wayne University [b]	F. W. Hartman, M.D.	Degree	12	16	Varies	None
Mt. Carmel Mercy Hospital, Detroit	Mercy College.[b]	L. W. Gardner, M.D.	3 yrs.	12	12	July	$150
Providence Hospital, Detroit	Wayne University [b]	D. H. Kaump, M.D.	2 yrs.	12	12	Varies	$100
St. Mary's Hospital, Detroit [a,c]	Wayne University [b]	M. E. Maun, M.D.	3 yrs.	12	4	Varies	$100
Woman's Hospital, Detroit	Wayne Univ. [b]; Mich. State Coll. [b]	D. C. Beaver, M.D.	3 yrs.	12	12	JulySept	$100
Wayne County General Hospital, Eloise	Wayne Univ.[b]; Univ. of Detroit [b]; Michigan State College [b]	S. E. Gould, M.D.	3 yrs.	12	7	Quarterly	None
Hurley Hospital, Flint [a]		R. J. Jermstad, M.D.	2 yrs.	12	6	Varies	None
Blodgett Memorial Hospital, Grand Rapids [a]		C. A. Payne, M.D.	2 yrs.	12	4	July	None
Borgess Hospital, Kalamazoo		H. R. Prentice, M.D.	2 yrs.	12	4	July	B
Bronson Methodist Hospital, Kalamazoo	Michigan	H. R. Prentice, M.D.	2 yrs.	12	4	JanJuly	B
Edward W. Sparrow Hospital, Lansing	Michigan State College [b]	C. E. Black, M.D.	3 yrs.	12	8	Varies	$100
Michigan Department of Health Bureau of Laboratories, Lansing [a]	[a]	H. E. Cope, M.D.	3 yrs.	12	50	Varies	None
St. Lawrence Hospital, Lansing	Michigan State College [b]	C. E. Black, M.D.	3 yrs.	12	8	Varies	$100
Port Huron Hospital, Port Huron [a]	Michigan State College [b]	W. E. B. Hall, M.D.	2 yrs.	12	2	Varies	None
Wyandotte General Hospital, Wyandotte [a,c]	Wayne University [b]	M. E. Maun, M.D.	3 yrs.	12	3	Varies	$100
MINNESOTA							
St. Luke's Hospital, Duluth	Hamline Univ.[b]; Michigan College of Mining and Tech.[b]; South Dakota State College [b]	A. H. Wells, M.D.	2 yrs.	18	10	FebJuly	B
St. Mary's Hospital, Duluth [c]	College of St. Scholastica [b]	W. V. Knoll, M.D.	3 yrs.	14	14	July	$ 75B
Minneapolis General Hospital, Minneapolis	University of Minnesota [b]	A. J. Hertzog, M.D.	Degree	12	18	Varies	None
Swedish Hospital, Minneapolis	Gustavus Adolphus College [b]	S. V. Lofsness, M.D.	2 yrs.	24	14	Varies	$125
University Hospitals, Minneapolis [a]	University of Minnesota [b]	G. T. Evans, M.D.	3 yrs.	12	52	Quarterly	U
Ancker Hospital, St. Paul [c]	University of Minnesota [b]	J. F. Noble, M.D.	3 yrs.	12	6	July	None
Charles T. Miller Hospital, St. Paul [a]	Macalester College [b]	K. Ikeda, M.D.	3 yrs.	12	10	FebJuly	$110
MISSISSIPPI							
Mercy Hosp.-Street Memorial, Vicksburg [a]	Mississippi State College [b]	R. H. Fenstermacher, M.D.	2 yrs.	12	8	Varies	B
MISSOURI							
Kansas City General Hospital, Kansas City [a]		V. B. Buhler, M.D.	2 yrs.	18	18	Monthly	None
Kansas City General Hosp. No. 2, Kansas City		V. B. Buhler, M.D.	2 yrs.	18	4	Varies	None
Menorah Hospital, Kansas City [a]		R. Koritschoner, M.D.	Degree	12	8	Varies	None
Research Hospital, Kansas City		H. K. B. Allebach, M.D.	2 yrs.	12	9	Varies	None
St. Joseph Hospital, Kansas City		L. Sherwood, M.D.	Degree	12	12	Varies	B
St. Luke's Hospital, Kansas City		F. C. Helwig, M.D.	2 yrs.	15	10	Varies	None
St. Mary's Hospital, Kansas City		A. E. Upsher, M.D.	Degree	12	6	Varies	B
Barnes Hospital, St. Louis [a]	Washington Univ. School of Medicine	C. G. Harford, M.D.	2 yrs.	12	10	Varies	$ 50
Firmin Desloge Hospital, St. Louis	St. Louis University [b]	G. O. Broun, M.D.	3 yrs.	12	15	JanSept	U
Homer G. Phillips Hospital, St. Louis [a]		S. H. Gray, M.D.	2 yrs.	18-24	7	Varies	None
St. Anthony's Hospital, St. Louis [c]	Marquette University (Milwaukee)[b]	B. C. Portuondo, M.D.	2 yrs.	24	1	July	None
St. Louis City Hospital, St. Louis		S. H. Gray, M.D.	2 yrs.	15	8	Quarterly	None
Burge Hospital, Springfield [a]	Drury College [b]	E. B. Hanan, M.D.	2 yrs.	12	6	June	U&B
MONTANA							
Murray Hospital, Butte [a]	University of Montana [b]; Montana State College [b]	R. F. Peterson, M.D.	3 yrs.	12	4	June	None
Columbus Hospital, Great Falls [a]	College of Great Falls [b]	T. F. Walker, M.D.	2 yrs.	12	3	JuneSept	None
NEBRASKA							
Bryan Memorial Hospital, Lincoln	Nebraska Wesleyan University [b]	F. H. Tanner, M.D.	2 yrs.	12	5	Quarterly	B
Lincoln General Hospital, Lincoln [a]		F. H. Tanner, M.D.	2 yrs.	12	4	Quarterly	None
Bishop Clarkson Memorial Hospital, Omaha		J. P. Tollman, M.D.	2 yrs.	12	4	Varies	$ 75
Creighton Memorial St. Joseph's Hosp. Omaha [a]	Creighton University [b]	B. C. Russum, M.D.	2 yrs.	12-24	12	Varies	$100
University of Nebraska Hospital, Omaha	Univ. of Nebraska College of Medicine	J. P Tollman, M.D.	2 yrs.	12	8	Varies	$ 75
NEVADA							
St. Mary's Hospital, Reno	University of Nevada [b]	L. Parsons, M.D.	3 yrs.	18	2	Varies	None
NEW HAMPSHIRE							
Mary Hitchcock Memorial Hospital, Hanover		R. E. Miller, M.D.	2 yrs.	12	8	Quarterly	B
Elliot Hospital, Manchester [a]		S. M. Brooks, M.D.	2 yrs.	12	2	July	B

APPROVED SCHOOLS FOR CLINICAL LABORATORY TECHNICIANS—Continued

Name and Location of School	College Affiliation	Pathologist in Charge	Minimum Pre-requisite College	Length of Training in Months	Maximum Enrolment	Classes Begin	Tuition
NEW JERSEY							
Newark Beth Israel Hospital, Newark [a]	*Newark University* [b]	L. M. Goldman, M.D.	2 yrs.	12	10	Varies	U
Newark City Hospital, Newark [a,c]	New York University [b]	H. S. Martland, M.D.	3 yrs.	12	2	June	U&B
Presbyterian Hospital, Newark [a]	New York Univ. [b]; Rutgers Univ. [b]	S. A. Goldberg, M.D.	2 yrs.	12	3	Varies	U&B
St. Michael's Hospital, Newark [a]		S. J. Rose, M.D.	2 yrs.	12	2	Sept	$150
NEW YORK							
Bender Hygienic Laboratory, Albany [a]		J. J. Clemmer, M.D.	2 yrs.	12	15	Sept	$200
Jewish Hospital, Brooklyn [a]		D. M. Grayzel, M.D.	4 yrs.	18	6	Quarterly	None
Prospect Heights Hospital, Brooklyn [a]		S. H. Polayes, M.D.	2 yrs.	12	3	Varies	None
Buffalo General Hospital, Buffalo [a]	University of Buffalo [b]	S. L. Vaughan, M.D.	2 yrs.	12	26	Varies	$ 50
Edward J. Meyer Memorial Hospital, Buffalo [a]	University of Buffalo [b]	D. K. Miller, M.D.	2 yrs.	12-24	10	Monthly	None
Arnot-Ogden Memorial Hospital, Elmira [a]		S. E. Cohen, M.D.	2 yrs.	12	3	Varies	$ 50
St. Joseph's Hospital, Elmira [a]	Nazareth College [b]	S. E. Cohen, M.D.	2 yrs.	12	2	Sept	$ 50
Meadowbrook Hospital, Hempstead	Adelphi College [b]	T. J. Curphey, M.D.	2 yrs.	18	3	Varies	None
Mary Immaculate Hospital, Jamaica [a]		M. Bevilacqua, M.D.	Degree	12	5	Oct	B
St. John's Long Island City Hospital, Long Island City [a]		J. Werne, M.D.	Degree	12-24	3	JanJuly	None
Montefiore Hospital for Chronic Diseases, New York City [a]	New York University [b]	S. H. Rosen, M.D.	3 yrs.	12	2	June	U
Rochester General Hospital, Rochester [a]		M. G. Bohrod, M.D.	Degree	18	12	Varies	$ 50
St. Mary's Hospital, Rochester [a]		S. M. Bouton Jr., M.D.	Degree	12	4	Varies	None
Ellis Hospital, Schenectady [a]	*Elmira College* [b]	E. Kellert, M.D.	2 yrs.	12	8	Varies	$100
U. S. Marine Hospital, Staten Island [a]	Wagner Memorial Lutheran College [b]	L. H. Sophian, M.D.	3½ yrs.	12	8	Quarterly	B
Samaritan Hospital, Troy [a]	Russell Sage College [b]	G. H. Klinck Jr., M.D.	3 yrs.	12	3	Varies	U
Grasslands Hospital, Valhalla [a,c]	*New York University* [b]	G. Y. McClure, M.D.	3 yrs.	12	2	July	None
NORTH CAROLINA							
Charlotte Memorial Hospital, Charlotte	Queens College [b]	P. Kimmelstiel, M.D.	2 yrs.	12-18	3	July	B
Duke Hospital, Durham [a]	*Duke University* [b]	D. T. Smith, M.D.	2 yrs.	18	45	Quarterly	B
Watts Hospital, Durham	University of North Carolina	R. L. Holman, M.D.	2 yrs.	12	7	JanJuly	$ 50
North Carolina Baptist Hosp., Winston-Salem [a]	Salem College [b]	C. C. Carpenter, M.D.	2 yrs.	12	10	Quarterly	$ 65
NORTH DAKOTA							
Trinity Hospital, Minot		P. J. Breslich, M.D.	2 yrs.	12	5	Sept	B
OHIO							
Children's Hospital, Akron		M. R. Baker, M.D.	2 yrs.	12	2	JanJuly	None
City Hospital, Akron [a]		L. Catron, M.D.	2 yrs.	12	4	Varies	None
Peoples Hospital, Akron		G. R. Dochat, M.D.	2 yrs.	12	5	July	B
St. Thomas Hospital, Akron		G. G. Proskauer, M.D.	2 yrs.	12-15	3	July	None
Good Samaritan *Hospital, Cincinnati*	Coll. of Mt. St. Joseph-on-the-Ohio [b]	W. M. German, M.D.	3 yrs.	12	5	Sept	$250B
Mt. Sinai Hospital, Cleveland	Flora Stone Mather College [b]	B. S. Kline, M.D.	2 yrs.	12	12	Varies	$250B
University Hospitals, Cleveland [a]	Flora Stone Mather College [b]	H. Goldblatt, M.D.	2 yrs.	12	17	Varies	$100
Mt. *Carmel Hospital, Columbus* [a]	Ohio University [b]	H. B. Davidson, M.D.	2 yrs.	12	6	Monthly	None
[illegible] Loving University Hosp., Columbus [a]	Ohio State University [b]	H. L. Reinhart, M.D.	3 yrs.	12	15	Quarterly	U
[illegible] Dayton	University of Dayton [b]	M. Oosting, M.D.	2 yrs.	12	4	JanJuly	None
[illegible] East Cleveland [a]	Cleveland College [b]	E. Goodsitt, M.D.	2 yrs.	12	8	JanJuly	$100
Springfield City Hospital, Springfield [a]		M. P. Hunter, M.D.	2 yrs.	12	3	Varies	$100B
Mercy Hospital, Toledo [a]	*Mary Manse College; Univ. of Toledo* [b]	J. B. Rucker, M.D.	2 yrs.	12	3	Sept	None
St. Vincent's Hospital, Toledo [a]	University of Toledo [b]	T. L. Ramsey, M.D.	3 yrs.	12	6	JanJuly	None
Toledo Hospital, Toledo	University of Toledo [b]	B. Steinberg, M.D.	3 yrs.	12	8	Varies	B
Youngstown Hospital, Youngstown		H. K. Giffen, M.D.	2 yrs.	12	6	Varies	None
OKLAHOMA							
St. Anthony's Hospital, Oklahoma City	Okla. Agricultural and Mechanical College [b]	H. Jeter, M.D.	Degree	12	6	Varies	None
University Hospitals, Oklahoma City [a]	Univ. of Oklahoma School of Med.	B. Halpert, M.D.	Degree	12	6	Varies	None
St. John's Hospital, Tulsa [a]	University of Tulsa [b]	E. E. Palik, M.D.	2 yrs.	12	4	Varies	None
OREGON							
Sacred Heart General Hospital, Eugene		E. D. Furrer, M.D.	2 yrs.	12	2	Varies	None
Emanuel Hospital, Portland		*H. H. Foskett, M.D.*	2 yrs.	12	2	Varies	B
Good Samaritan Hospital, Portland [a]		C. H. Manlove, M.D.	2 yrs.	12	4	Varies	None
Portland Sanitarium and Hospital, Portland [a]	University of Oregon Med. School	W. C. Hunter, M.D.	2 yrs.	12	2	JanJune	None
St. Vincent's Hospital, Portland [a]		F. R. Menne, M.D.	Degree	12	5	Sept	$120
University of Oregon Medical School Hospitals and Clinics, Portland [a]	University of Oregon Medical School	W. C. Hunter, M.D.	2 yrs.	12	12	Varies	None
PENNSYLVANIA							
Abington Memorial Hospital, Abington [a]		J. Elman, M.D.	2 yrs.	18	7	Varies	None
Allentown *Hospital, Allentown*	Cedar Crest College [b]; Moravian College for Women [b]	J. J. Wenner, M.D.	2 yrs.	12	3	June	$ 75
Sacred Heart Hospital, Allentown	Moravian College for Women [b]	C. B. Reitz, M.D.	3 yrs.	12	6	JulySept	$ 75
St. Luke's Hospital, Bethlehem	Moravian College for Women [b]	H. A. Rothrock, M.D.	2 yrs.	12	3	June	$ 75
Bryn Mawr Hospital, Bryn Mawr [a]		M. M. Strumia, M.D.	2 yrs.	15	4	Quarterly	B
Geo. F. Geisinger Memorial Hospital, Danville	Bucknell University [b]	H. F. Hunt, M.D.	2 yrs.	12	6	FebJuly	U
Fitzgerald-Mercy Hospital, Darby		J. Stasney, M.D.	Degree	12	4	Varies	B
Easton Hospital, Easton [a]	Moravian College for Women [b]	F. O. Zillessen, M.D.	2 yrs.	12	3	Summer	None
Harrisburg Hospital, *Harrisburg*		G. R. Moffitt, M.D.	2 yrs.	12	10	Varies	None
Hazleton State Hospital, Hazleton [a]	Hazleton Undergraduate Center	J. Foldes, M.D.	2 yrs.	12	6	FebSept	B
Mercy Hospital, Johnstown [a]		B. J. McCloskey, M.D.	2 yrs.	12	4	June	B
Nesbitt Memorial *Hospital*, Kingston		W. L. Lanyon, M.D.	2 yrs.	12	3	Summer	None
Germantown Dispensary and Hosp., Philadelphia		F. B. Lynch Jr., M.D.	2 yrs.	12	5	Varies	$100
Jefferson Medical College Hospital, *Philadelphia*	Jefferson Medical College	C. J. Bucher, M.D.	2 yrs.	15	16	MarSept	$100B
Jewish Hospital, *Philadelphia* [a]		C. Weiss, M.D.	2 yrs.	12	6	Quarterly	$100
Lankenau Hospital, Philadelphia		C. E. Brown, M.D.	2 yrs.	12	3	FebSept	$ 50

APPROVED SCHOOLS FOR CLINICAL LABORATORY TECHNICIANS—Continued

Name and Location of School	College Affiliation	Pathologist in Charge	Minimum Pre-requisite College	Length of Training in Months	Maximum Enrolment	Classes Begin	Tuition
PENNSYLVANIA—Continued							
Mt. Sinai Hospital, Philadelphia		D. R. Meranze, M.D.	2 yrs.	18	3	Varies	$150B
Pepper Laboratory of Clinical Medicine, University of Pennsylvania, Philadelphia	University of Pennsylvania	J. H. Austin, M.D.	2 yrs.	18	6	Varies	$180
Philadelphia General Hospital, Philadelphia [a]	Pennsylvania State College	J. H. Clark, M.D.	Degree	12	8	Varies	None
St. Agnes Hospital, Philadelphia		J. Stasney, M.D.	2 yrs.	12	6	Quarterly	B
St. Joseph's Hospital, Philadelphia [a]		L. A. Soloff, M.D.	2 yrs.	12	4	FebSept	$120B
Temple University Hospital, Philadelphia [a]	Temple University [b]	E. H. Valentine, M.D.	2 yrs.	22	30	FebSept	$100
Montefiore Hospital, Pittsburgh		K. Y. Yardumian, M.D.	2 yrs.	12	6	June	B
Reading Hospital, Reading	Albright College [b]	E. D. Funk, M.D.	2 yrs.	12	4	Sept	$150
St. Joseph's Hospital, Reading		G. P. Desjardins, M.D.	2 yrs.	12	4	Varies	$150
Moses Taylor Hospital, Scranton		C. L. Mattas, M.D.	2 yrs.	12	4	Varies	None
Scranton State Hospital, Scranton [a]		C. L. Mattas, M.D.	2 yrs.	12	4	Varies	None
Wilkes-Barre General Hospital, Wilkes-Barre [a]		C. R. Tuthill, M.D.	2 yrs.	12	4	Sept	None
Williamsport Hospital, Williamsport [a]	Bucknell University [b]	M. G. Colvin, M.D.	2 yrs.	12	3	Varies	U
SOUTH CAROLINA							
Medical College of the State of South Carolina, Charleston [a]	Med. Coll. of State of So. Carolina	F. B. Johnson, M.D.	2 yrs.	15	12	Varies	B
TENNESSEE							
John Gaston Hospital, Memphis [a]	Univ. of Tennessee Coll. of Medicine	D. H. Sprunt, M.D.	2 yrs.	15	8	MarSept	U
Methodist Hospital, Memphis		A. C. Gose, M.D.	2 yrs.	18	6	....	....
St. Joseph's Hospital, Memphis [a]		T. C. Moss, M.D.	2 yrs.	15	10	Varies	B
Geo. W. Hubbard Hospital, Nashville [a]	Meharry Medical College	W. H. Grant, M.D.	2 yrs.	18	12	Varies	$105
Nashville General Hospital, Nashville [a]		W. A. DeMonbreun, M.D.	2 yrs.	12	4	Varies	None
TEXAS							
Brackenridge Hospital, Austin	University of Texas [b]	S. W. Bohls, M.D.	2 yrs.	12	5	FebAug	None
Hotel Dieu Hospital, Beaumont [c]	Lamar College	E. D. Furey, M.D.	2 yrs.	18	3	Varies	B
Baylor University Hospital, Dallas [a]	Baylor University [b]	J. M. Hill, M.D.	2 yrs.	13	9	FebJuly	$100
Harris Memorial Methodist Hosp., Ft. Worth [a]	Texas Christian University [b]	J. J. Andujar, M.D.	3 yrs.	12	8	FebSept	U
Terrell's Laboratories, Ft. Worth [a]	North Texas State College [b]	T. C. Terrell, M.D.	3 yrs.	12	3	FebOct	None
John Sealy Hospital, Galveston [a]	University of Texas School of Med.	H. H. Sweets Jr., M.D.	2 yrs.	12	16	Quarterly	U
Jefferson Davis Hospital, Houston [a]	University of Houston [b]	W. W. Coulter Sr., M.D.	2 yrs.	12	12	Monthly	$ 50
St. Joseph's Infirmary, Houston		S. Knittel, M.D.	2 yrs.	12	7	Varies	None
Med. and Surg. Memorial Hosp., San Antonio [a]		H. J. Schattenberg, M.D.	2 yrs.	12	4	Fall	None
Scott and White Hospital, Temple		W N. Powell, M.D.	2 yrs.	12	6	Varies	None
UTAH							
Thomas D. Dee Memorial Hospital, Ogden [a,c]	University of Utah [b]	F. B. Queen, M.D.	3 yrs.	12	2	June	U
Dr. W. H. Groves Latter-Day Saints Hospital, Salt Lake City [a]		J. H. Carlquist, M.D.	2 yrs.	12	3	JanJuly	None
Holy Cross Hospit	University of Utah [b]	O. A. Ogilvie, M.D.	3 yrs.	12	2	JuneSept	None
St. Mark's Hospit	Brigham Young University [b]	O. A. Ogilvie, M.D.	3 yrs.	12	4	JuneSept	U
Salt Lake County Gen. Hosp., Salt Lake City [a]	University of Utah [b]	F. D. Gunn, M.D.	4 yrs.	12	12	June	U
VERMONT							
University of Vermont College of Medicine, Burlington [a]	University of Vermont [b]	B. Pearson, M.D.	3 yrs.	12	4	Varies	U
VIRGINIA							
University of Virginia Hosp., Charlottesville [a]		W. E. Bray, M.D.	2 yrs.	12	12	Sept	B
DePaul Hospital, Norfolk [a]		A. F. Strauss, M.D.	2 yrs.	18	5	Varies	$ 50B
Norfolk General Hospital, Norfolk [a]		A. R. Crane, M.D.	2 yrs.	12	10	Monthly	$100
Medical College of Virginia Hospital Division, Richmond	Medical College of Virginia	J. H. Scherer, M.D.	2 yrs.	18	11	Varies	$150
Stuart Circle Hospital, Richmond	Richmond Professional Institute [b]	R. C. Beck, M.D.	2 yrs.	12	5	Varies	B
WASHINGTON							
King Count		C. R. Jensen, M.D.	2 yrs.	12	8	Varies	None
Providence		D. G. Mason, M.D.	2 yrs.	12	4	Quarterly	None
Deaconess E		G. A. C. Snyder, M.D.	2 yrs.	12	6	Varies	None
Sacred Heart Hospital, Spokane [a]		M. M. Patton, M.D.	2 yrs.	12	5	Varies	None
St. Luke's Hospital, Spokane [a]		O. O. Christianson, M.D.	3 yrs.	12	10	FebSept	$ 40
St. Joseph's Hospital, Tacoma [a]	Seattle College [b]	C. R. McColl, M.D.	2 yrs.	12	4	AprSept	$ 45
Tacoma General Hospital, Tacoma [a]		C. P. Larson, M.D.	2 yrs.	12	4	Varies	None
WISCONSIN							
St. Francis Hospital, La Crosse		O. Kanner, M.D.	2 yrs.	12-18	2	Varies	$100B
Madison General Hospital, Madison		L. McGary, M.D.	2 yrs.	12	4	Oct	None
St. Mary's Hospital, Madison		J. G. Pasternack, M.D.	2 yrs.	12	7	Varies	B
State of Wisconsin General Hospital, Madison [c]		W. D. Stovall, M.D.	3 yrs.	12	20	Varies	$ 96
Columbia Hospital	Marquette University [b]	G. H. Hansmann, M.D.	2 yrs.	24	2	JanJuly	None
Milwaukee County	Marquette University [b]	J. Kuzma, M.D.	2 yrs.	24	8	June	None
Milwaukee Hospital		J. Kuzma, M.D.	2 yrs.	12	3	JuneSept	$ 50
Mt. Sinai Hospital,		N. Enzer, M.D.	2 yrs.	12-24	4	Varies	$120-240
St. Joseph's Hospital, Milwaukee [c]	Marquette University [b]	W. A. D. Anderson, M.D.	2 yrs.	24	4	June	None
PUERTO RICO							
School of Tropical Medicine, University of Puerto Rico, San Juan [a]	University of Puerto Rico [b]	O. Costa Mandry, M.D.	Degree	12	20	Aug	U&B

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a. Male students are admitted.

b. College credit received during hospital training.

c. Only students from affiliated college admitted.

1. Students enrolled in twenty-month course leading to M.S. degree obtain thirty-six quarter hours credit; entrance requirement—B.S. degree; tuition, $100. Students enrolled in twelve-month course are allowed six quarter hours credit and receive a certificate.

2. College credit allowed by each of the following affiliations: Albion College, Central Michigan College of Education, Michigan College of Mining and Technology, Michigan State College, University of Michigan, and Western Michigan College of Education.

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SATURDAY, APRIL 20, 1946

HOSPITAL SERVICE IN THE UNITED STATES

The annual hospital report of the Council on Medical Education and Hospitals published in this issue of The Journal shows a continued increase of hospital service in 1945. The number of patients admitted was 16,257,402, or 220,544 more than reported in 1944. In addition there were 1,969,667 hospital births, a total unequaled in any previous year. The tremendous volume of hospital service in the United States is likewise reflected in the average census, or daily patient load, which reached a new high of 1,405,247. This average, measured over a period of one year, represents the unprecedented total of 512,915,155 treatment days. Included in the survey of 1945 are 6,511 registered hospitals, which have a combined capacity of 1,738,994 beds exclusive of 81,131 bassinets. While the number of beds represents a gain of 8,999 in the last year, the increase is small when compared with the rapid wartime expansion of 265,427 beds in 1943 and 80,691 in 1944.

The present report reflects only the early phase of peacetime readjustments in the hospital field. Changes are noted particularly in the federal hospitals, which show a reduction in number, in bed capacity and in total patients admitted. The latter were reduced by 239,322 in 1945, whereas an increase of 254,664 was reported in the previous year. Longer periods of hospitalization are now evident in the federal classification as well as an increased census, or daily patient load. The percentage bed occupancy increased sharply in 1945, as did also the average length of stay in the federal general hospital group. As in the previous war years, the statistical data on federal hospitals have been compiled as a unit report. It is not possible, therefore, in the present survey to supply separate information on federal groups except so far as individual hospital data are included in the registered list.

The general hospitals supply the greatest volume of hospital service, as evidenced by their report of 15,228,270 admissions, or 93.6 per cent of all patients admitted in 1945. They likewise gave care to 1,907,772 newborn infants, 96.8 per cent of the total live births in hospitals registered by the American Medical Association. Increases in general hospital admissions occurred in all governmental and nongovernmental groups except in the federal classification and in the hospitals listed as corporations unrestricted as to profit. The governmental general hospitals received 36 per cent of the total admissions, the nongovernmental general hospitals 57.6 per cent. In 1945 the average length of stay in general hospitals increased by two days, while the bed occupancy rate advanced from 61.6 to 72 per cent. These changes are largely the result of corresponding developments in the federal hospital group. In previous years the average census of the mental institutions exceeded the daily patient load reported by general hospitals. For the first time this trend has now been reversed, with a reported average of 665,105 in the general hospitals as compared with 624,349 in the mental hospital group. Considering the supply and utilization of hospital beds, it is of interest to note that the nonfederal general hospitals in relation to the estimated civilian population (U. S. Census Bureau, July 1, 1945) show a ratio of 3.5 beds per thousand, with an actual daily utilization of 2.6.

The governmental hospital group, which includes federal, state, county, municipal and city-county hospitals, has 78 per cent of the total hospital beds. They however received only 39 per cent of the admissions in 1945, whereas the nongovernmental hospitals, with 22 per cent of the beds, admitted nearly ten million patients, or 61 per cent.

Included in the present survey are reports on nursing personnel and schools of nursing education accredited by the respective states. Training is offered in 1,250 accredited schools, which report an enrolment of 130,909 student nurses as compared with 129,879 in 1944. One hundred and seventy-one schools, offering only affiliating courses, accommodated 11,238 student nurses in 1945. In the registered hospitals approximately 145,000 graduate nurses are regularly employed. The report shows an increase in all classifications of professional nursing personnel and also an expansion in the auxiliary nursing groups except in relation to practical nurses and attendants.

Hospitals are primarily concerned with the care and welfare of the sick, but many have also undertaken the additional responsibility of training interns, resident physicians, nurses and technical personnel. These educational functions do not in any way conflict with the chief purpose for which the hospital is maintained but serve to enhance the quality of medical and hospital care. The hospitals of the United States have completed the war years with a high record of achievement. Their accomplishment, in the face of many difficulties, gives full assurance that they will continue to render faithful and efficient service in the years to come.

TECHNICAL PERSONNEL IN HOSPITALS

The 1945 report on technical personnel in hospitals is presented on page 1083 of this issue. The full effect of the war on the employment of technicians can be reviewed by comparing the reports of previous years which have been included in the Hospital Number of THE JOURNAL since 1942. This first tabular presentation of the material represented statistics for 1941, which was the last peacetime year.

An extremely close correlation has been evident between the yearly increase in admissions to hospitals and in the number of full time technicians. There has been a 40.2 per cent increase in hospital admissions since war was declared, and this necessitated huge increases in personnel, who aided in diagnostic studies, in administering treatments or in record keeping. Only one group, the dietitians, has not been augmented in the same ratio. Full time dietitians have been increased 26.6 per cent during this period. Medical stenographers have been employed in comparatively larger numbers than any other full time group and now rank second to the clinical laboratory technicians in total numbers reported by hospitals.

An important change was experienced by the hospitals with the close of the war. Total part time employees in all technical fields have been decreased during 1945. Also there have been fewer full and part time personnel in those categories which until last year were enlarged in substantial excess of the ratio of increased admissions. These reports of decreased numbers of employees in the categories included in this survey are the first to occur since 1942. However, it is probably the result of many of the technical personnel resigning so that they could be reunited with their families after the war. This appears to be true in certain localities and might be responsible for this first postwar shift of employment. Because of this factor recent graduates will undoubtedly discover that many vacancies are waiting for them in hospitals.

One other observation still appears to be evident. During the war years many times the annual graduating class of approved schools were added to the technical personnel in hospitals. This could be done in some instances only by acquiring inadequately trained persons. Too frequently the unqualified accept responsibilities beyond their capacities. Thus a poorly trained technician will record the results of his studies in the same fashion commonly followed by others. Since practicing physicians no longer have personal contact with the majority of the technical personnel and are therefore not in a position to evaluate their capabilities it is a responsibility of the hospitals to demand excellent qualifications of all their workers. This can be accomplished only when the professional qualifications of each is investigated thoroughly.

Expansion of the physical medicine departments in hospitals is being evidenced by reports of larger numbers of occupational therapists and physical therapists. Greater expansion will be possible in these fields since approved schools continue to produce large numbers of graduates. The stimulus of the war created excessively large freshman classes in occupational therapy, and these students are now graduating from the three and five year curriculums devoted to their specialty. Physical therapy classes are also filled and large numbers will be available on graduation. In addition approximately 800 officers in the Physical Therapy Corps, all of whom are qualified, and about 400 qualified occupational therapists have been released from the Army since the current report from hospitals was received. Apparently few of these persons have entered other federal services, and consequently more professional workers should be reported in physical medicine departments of hospitals next year.

ACTINIC CANCER

The relation between actinic injury and carcinogenesis resulting from a therapeutic, occupational, environmental or experimental exposure to radiating energy has been in recent years the subject of several comprehensive monographic presentations.[1] The scientific importance of this problem has been enhanced by knowledge of two hazards connected with the use of atomic energy and artificially radioactive isotopes.

Lacassagne[2] has recently reviewed this subject in two volumes dealing with cancers following electromagnetic (roentgen rays, gamma rays, solar and ultraviolet rays) and corpuscular (alpha rays, beta rays) radiation. He concludes that the cancerigenic action of certain radiations (roentgen rays, rays from radioactive substances, ultraviolet rays) is not the result of a chemical substance set free in the irradiated tissue under the influence of the rays but more likely a direct effect of the exposure to actinic energy of certain cellular formations controlling cell division. The diversity of rays capable of exerting a carcinogenic effect is more apparent than real. All cancerigenic rays provoke a reaction in the cells through an impact of energy compatible with survival and proliferation. While the cancerigenic radiations are the same as those capable of producing cellular mutations, Lacassagne does not believe that an accidental radiomutation is the cause of cancer. He points out that alpha rays have never been shown, experimentally and clinically, to cause cancer. Gamma rays by themselves do not seem to exert such action, as therapeutic radiation cancers originate at the periphery of the necrotic cylinder surrounding the applicator, i. e. at a site where the beta rays exhaust their energy and which is passed by the gamma rays.

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[1] Warren, Shields: Effects of Radiation on Normal Tissues, Arch. Path 34: 443 (Aug), 562 (Sept), 749 (Oct), 917 (Nov), 1070 (Dec.) 1942, 35: 121 (Jan.) 304 (Feb) 1943 Henshaw, P. S · Implications from Studies with Physical Carcinogens, J Nat Cancer Inst. 5: 419 (June) 1945 Hueper, W. C Occupational Tumors and Allied Diseases, Springfield, Ill, Charles C Thomas, 1942, p 896

[2] Lacassagne, A.: Les cancers produits par les rayonnements electromagnetiques, Paris, Hermann & Co, 1945, p 137; Les cancers produits par les rayonnements corpusculaires, Paris, Hermann & Co, 1945, p. 102.

Moreover, chromosomic or somatic cell mutations become manifest within a relatively short time after the action of the causative agent, while radiation cancers always show a long latency period of months' or years' duration after the cessation of their radiation. Lacassagne questions whether a radiomutation affecting the mechanism of cell division can remain quiescent for such a long time. He suggests, therefore, that the long latency period is more plausibly explained by a cancerigenic mechanism necessitating the action of repeated minute radiolesions affecting the cellular structure which controls cell division. This ultimately causes a mutation through the development of molecular changes in the sensitive zone after the absorption of small quantums of energy. The final step in this process may be catalyzed by nonspecific factors, such as trauma and inflammation. Lacassagne maintains that this concept of radiocancerigenesis is supported by observations made in the production of cancers by specific chemicals and thus possibly might be applicable also to chemocancerigenesis.

These concepts are in general harmony with the hypothesis of Henshaw, who considers carcinogenesis the result of a gradualistic tangential differentiation, and with those of Hueper, who advances similar arguments against the supposition of cancer formation by direct radiomutation. Hueper emphasizes the gradual process of cancerization in his theory of allergic mutation. It is, moreover, a well established experimental fact that the mild action of physical and chemical carcinogens may produce benign neoplastic proliferations (warts, papillomas, adenomas) which on continued exposure may become cancerous or may be followed by the development of primary cancer.

While discounting age as a significant cancerigenic factor, Lacassagne asserts that the difference in the length of the latency period is in part controlled by the intensity of the exposure to a carcinogenic agent and in part dependent on the relative metabolic activity of the species, as it is inversely proportional to the size of the animal. The general validity of the last part of this statement is open to question in view of the obvious refractoriness of some species to certain cancerigenic agents (monkeys to tar; rabbits to ultraviolet rays).

According to Lacassagne's calculations, the quantum energy needed for the production of cancer is approximately the same for roentgen rays (28×10^7 ergs per square centimeter, by 60 kilovolts) and for ultraviolet rays (30×10^7 ergs per square centimeter), while only 1.5×10^7 ergs per square centimeter of absorbed energy of beta rays have such an effect. The carcinogenic dose of corpuscular radiation is still undetermined.

Lacassagne notes that the amount of energy carried by thermic rays is apparently too weak to elicit any fundamental disturbances in the molecular and atomic structures of the cellular constituents inducive to cancer formation and that reliable clinical and experimental evidence does not exist supporting such an action. Hueper, who comes to a similar conclusion, suggests therefore that the development of cancers in old burn scars might be due to the inclusion of incomplete combustion products in the scar tissue.

Current Comment

ADDITIONAL RESIDENCIES APPROVED

Since 1941 the number of residencies approved by the American Medical Association has expanded from 5,256 to 8,043, a total increase of 53.2 per cent. This development of educational facilities directed mainly toward the needs of physician veterans is continuing, as evidenced by the large number of applications submitted by hospitals in recent months. In order that newly organized residency programs may be available to veterans without undue delay, the Council on Medical Education and Hospitals in collaboration with the Advisory Board for Medical Specialties has inaugurated a plan for the temporary approval of residencies. Under this plan, which is described in the present issue as well as in THE JOURNAL of March 2, temporary approval may be extended without inspection if the representatives of the Council and the respective specialty boards are reasonably satisfied that the quality of teaching personnel, the volume of clinical material and the organization of the training program conform with existing standards. A considerable number of applications have already been evaluated in accordance with this plan, and others are now in process of review. Those that have recently been granted temporary approval are included in the supplementary list on pages 1086 and 1087. The previous list of Approved Residencies and Fellowships was published in THE JOURNAL, Sept. 29, 1945. The Council, in cooperation with the American boards, is bending every effort to aid the development of additional high grade residency programs for medical veterans. As further applications are reviewed, announcements of new approvals will be published in THE JOURNAL.

EXTENT OF IMMUNIZATION PROCEDURES IN FARM FAMILIES

The effectiveness of immunization against smallpox, diphtheria and typhoid is well known. Recently Gover and Yaukey[1] of the United States Public Health Service reported an analysis of the frequency of these immunization procedures in children of families borrowing from the Farm Security Administration in nineteen different localities, including both Southern and Northern communities. Considerable variability in the percentage of children immunized was found in the different localities. In the South, at least, these differences seem to be associated to some extent with the organization of local health departments. The frequency of vaccination against smallpox varied greatly with the size of the community, vaccination rates being higher in cities. It varied also slightly with the income and section of the country. Between the ages of 10 and 14 years, 57 per cent of the children of rural borrower families of the Farm Security Administration in Southern areas had been vaccinated against smallpox; this compares with 79 per cent in towns of 100,000 or more, 84 per cent in towns of 5,000 to 100,000, 72 per cent in small towns and 51 per cent in rural areas, as reported by the Committee on the Costs of Medical Care. Immunization against diphtheria was not associated with the size of the city but varied greatly with size of family income and slightly with geographic section. Immunization against typhoid has been performed mainly in areas where typhoid is a real problem; that is, in rural areas and small towns of the South. About 50 per cent of the children in Southern localities between 10 and 14 years of age had been immunized according to this survey. The immunization procedures were performed with equal frequency on boys and girls. The percentage of Negro children immunized was less than that of white children. Perhaps this lowered frequency of immunization of Negro children is the principal explanation for the corresponding lowered frequency among low income families. Unfortunately the report does not suggest the association.

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[1] Gover, Mary, and Yaukey, Jesse B.: Physical Impairments of Members of Low Income Farm Families, 11,490 Persons in 2,477 Farm Security Administration Borrower Families, 1940: VI. Extent of Immunization Against Smallpox, Diphtheria and Typhoid Fever, Pub. Health Rep. **61**: 97 (Jan. 25) 1946.

THE DISTINGUISHED SERVICE MEDAL

The Committee on Distinguished Service Awards has given special consideration to the problem of nominating to the Board of Trustees the names of persons of distinction in the field of medicine on whom the House of Delegates may wish to confer the Distinguished Service Medal. Among all the honors which a physician may attain, the recipient of the Distinguished Service Medal is most carefully chosen. The Committee on Distinguished Service Awards studies such nominations as may be made to it; just before the annual session it nominates five physicians to the Board of Trustees. At its meeting just before the meeting of the House of Delegates the Board of Trustees selects three of these five names, which in turn are nominated to the House of Delegates. Immediately on assembling, the House of Delegates receives these names from the chairman of the Board of Trustees and proceeds at once to ballot. Thus far those who have received the Distinguished Service Medal have been physicians of great distinction whose names have been associated with the progress of medical science and with discoveries of historical importance in the field of medicine. In order to make the best possible choice, the committee wishes to hear the voice of the medical profession. Those who wish to nominate persons of distinction may send the nominations, including the name of the one to be nominated and a record of his career together with some of the reasons why he should receive this medal, to the chairman of the committee, Dr. Alfred A. Walker, Highland Plaza Apartments, Birmingham, Ala. These nominations should be received by Dr. Walker not later than June 1, so that the necessary data may be suitably assembled for submission to his committee.

MEDICAL RECORD LIBRARIANS

An attempt is being made to bring an in-service type of training to the large number of poorly trained medical record librarians that hospitals have been forced to acquire. During the war years prospective students were encouraged to enter fields which bore a direct relationship to diagnosis and treatment of patients. As a consequence there has been a pitifully small number of graduates from approved medical record library schools. Only 178 graduates have been produced by all approved schools since the war began. This figure represents only 15 per cent of the so-called medical record librarians that have been added to the hospital staffs in the same period. Last year plans were described for in-service training of this excessively large number of workers who have been employed by hospitals but who have not had sufficient training. Two institutes of one week each have been presented despite travel restrictions. In the near future it is hoped to bring seventy such brief training programs to various centers during a year. Such a program could also include correspondence studies as a follow-up course. By such means the record departments of hospitals can be improved. Hospital administrators are urged to send their untrained workers to these institutes. In the meantime adequate publicity must be available to fill the approved schools with students. Three schools do not have students, and most of the remaining schools have only a small enrolment. The maximum capacity of these schools is 100 students. A detailed description of the approved courses can be found on page 1154 of this issue.

PIGEON SANITATION

THE JOURNAL, Nov. 17, 1945, discussed the problem of the dissemination of virus pneumonia by pigeons and stated that "the likelihood of contracting disease from inhaling the dust of streets and parks where pigeons congregate and where their droppings soil the surroundings was considered remote and the risk insignificant." However, pigeons are also a problem because they distribute filth. In cities large flocks of pigeons foul the streets, the window sills and under the eaves and produce large accumulations of filth which are not easily accessible for cleaning. The placing of wire nets and other obstacles to nesting and resting drives the majority of the pigeons into two or three localities to roost, with accompanying disfiguration of the buildings. The flocks of pigeons under control of breeders and racing roosts are adequately cared for and not a problem. Certainly pigeons should not be fed in the city streets. Normal life of a pigeon is best in the countryside where they belong, as do cows, chickens and other domestic birds and animals.

MEDICINE AND THE WAR

ARMY

ARMY TO SET UP ARTIFICIAL LIMB SHOP IN PHILIPPINES

An orthopedic team of four officers, sixteen enlisted personnel and two civilians recently left for the Philippines to set up an artificial limb shop to fill the needs of the U. S. Army's Filipino amputees. The limb shop will provide facilities for training Filipino personnel in the manufacture of artificial limbs, in addition to supplying amputees' requirements. When the Filipinos are considered sufficiently skilled, the shop will be turned over to them for operation.

Capt. John J. Keys, former chief of the orthopedic limb shop at McCloskey General Hospital, Temple, Texas, will head the team. The new artificial limb center will be located at Manaluyong, about 5½ miles from Manila. The twofold purpose of establishing an organized artificial limb shop and instructing the Filipinos in the technic of limb construction will be accomplished in approximately six months, Captain Keys said.

AWARDED RICHARD PEARSON STRONG PALLADIUM MEDAL

Brig. Gen. George Russell Callender, commandant of the Medical Department Professional Service Schools, Washington, D. C., was recently awarded the Richard Pearson Strong Palladium Medal by the American Foundation for Tropical Medicine, with an honorarium of $500, both gifts of the Winthrop Chemical Company, Inc., New York. As stated in the citation accompanying the award, "Brig. Gen. Callender's supervision, guidance and research in the school contributed directly to the achievement of the lowest sick rate of any army in the history of war. His initiative and effort were largely responsible for the creation of the course in tropical medicine and for the development of extensive research activities at the Army Medical School in 1941 before Pearl Harbor. As a result of the typhus vaccine developed in 1942 not a single United States soldier died of epidemic typhus fever." General Callender graduated from Tufts College Medical School, Boston, in 1908 and entered the service May 18, 1913.

AVIATION MEDICAL EXAMINERS

Fifty-three medical corps officers recently graduated from the AAF School of Aviation Medicine, Randolph Field, Texas, as aviation medical examiners. The graduation address was made by Col. Edwin M. Day, deputy chief of staff, AAF Flying Training Command, Randolph Field, Texas, and presentation of the diplomas was made by Brig. Gen. Eugen G. Reinartz, commandant of the school.

ARMY AWARDS AND COMMENDATIONS

Brigadier General William C. Menninger

The Distinguished Service Medal was recently awarded to Brig. Gen. William C. Menninger, director of the neuropsychiatry consultants division, Office of the Surgeon General, for the primary responsibility for "solving one of the most serious medical problems faced by the Army" in developing and putting into effect a treatment plan for neuropsychiatric cases. "This program of unprecedented scope," the citation stated, "resulted in restoring many thousands of mentally sick men to health and usefulness." General Menninger was commissioned in the Army Medical Corps in November 1942.

Colonel Frank P. Strome

The Legion of Merit was recently presented to Col. Frank P. Strome, Ashley, Pa., who, as deputy surgeon and surgeon, Third Service Command, from August 1942 to October 1945, maintained exceptionally high standards of health throughout the command. He rendered exemplary humanitarian services by requiring the best facilities and equipment as well as the most skilled professional personnel for the treatment of the sick, injured and war maimed. Dr. Strome graduated from the Medico-Chirurgical College of Philadelphia in 1915 and was commissioned in the Medical Corps in June 1917. He retired from active duty in 1934 and was recalled to the Army in 1940.

Lieutenant Colonel Edward J. Dehne

Lieut. Col. Edward J. Dehne, Coquille, Ore., was recently awarded the Certificate of Merit "for the performance of outstanding services in Civil Affairs and Military Government Public Health operations in northwest Europe." He is also the recipient of the Purple Heart, given because of a wound received in action near Remagen on March 22, 1945. Dr. Dehne also received the Legion of Merit "for outstanding services as executive officer, European Civil Affairs Medical Group, European Civil Affairs Division, and as assistant division surgeon from May 1944 to August 1945. Through his untiring efforts and extremely valuable technical ability, working long and arduous hours under adverse conditions, he assisted in the organization, establishment and maintenance of the medical service of the division and the personnel studies and development of plans for deployment and utilization of personnel of the Medical Group in Civil Affairs and Military Government Public Health operations. His zealous efforts contributed to a great extent in the successful completion of the mission of the Medical Group and to the work of the Public Health Branch." Dr. Dehne graduated from the University of Oregon Medical School, Portland, in 1937 and entered the service Oct. 27, 1941.

Lieutenant Colonel Gerald H. Teasley

The Legion of Merit was recently awarded to Lieut. Col. Gerald H. Teasley, now a fellow in urology at the Mayo Foundation, Rochester, Minn., for "performance of outstanding service." Formerly director of the military personnel division, Office of the Surgeon General, Washington, D. C., Dr. Teasley established a classification system for the best distribution of medical officers. He also prepared plans for demobilization to civilian occupations. The citation stated further that Dr. Teasley's services "have been characterized by a high degree of proficiency surpassing that which might reasonably be expected of an officer in his position." Dr. Teasley graduated from Emory University School of Medicine in 1930 and entered the service Jan. 9, 1941.

Colonel Thomas B. Turner

Col. Thomas B. Turner, former director of the civil public health division, Office of the Surgeon General, was recently awarded the Legion of Merit for his part in "some of the most important advances made in preventive medicine service during World War II." Dr. Turner graduated from the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, in 1925 and was commissioned in the Army Medical Corps in January 1942. Prior to his entrance into the Army Dr. Turner was in charge of the division of venereal disease in the Johns Hopkins University School of Hygiene and Public Health and served as consultant in venereal disease to the Rockefeller Foundation.

Captain Charles D. Clark

The Bronze Star was recently awarded to Capt. Charles D. Clark, Traverse City, Mich., posthumously, for "meritorious achievement aboard the Hospital Ship U. S. S. *Comfort* in the Southwest Pacific from July 25, 1944 to April 28, 1945 in connection with military operations against the enemy. As a member of the surgical section of a hospital ship's complement Captain Clark demonstrated a high degree of surgical skill while working many arduous hours to save the lives and implement greatly the complete recovery of many patients. He was killed while working in the operating pavilion when a Japanese suicide plane attacked the ship. By his exceptional professional skill and high sense of duty, Captain Clark further enhanced the lofty traditions of the Medical Service." Dr. Clark graduated from Wayne University College of Medicine, Detroit, in 1939 and entered the service July 1, 1942.

Lieutenant Colonel Phillip T. Knies

The Legion of Merit was recently awarded to Lieut. Col. Phillip T. Knies, army quarantine liaison officer, preventive medicine service, Office of the Surgeon General, for his work in the "planning, organization and supervision of the army foreign quarantine program. . . . Assiduously active in the definition and solution of problems relating to foreign quarantine in military traffic, Colonel Knies was in large measure responsible for protecting this nation's people, agriculture and various enterprises from foreign pestilences." Dr. Knies graduated from the Ohio State University College of Medicine, Columbus, in 1931 and entered the service Sept. 15, 1942.

Colonel Gouvernour V. Emerson

The Legion of Merit was recently bestowed on Col. Gouvernour V. Emerson, commanding officer of Crile General Hospital, Cleveland. The citation accompanying the award stated that Colonel Emerson "rendered distinguished service as commanding officer, Harmon General Hospital, Texas, from September 1942 to October 1945. His devotion to duty in administering this hospital, charged with the training of medical units and the malaria research program, contributed materially to the cause of humanity." Dr. Emerson graduated from the Medico-Chirurgical College of Philadelphia in 1914 and entered the service Feb. 2, 1917.

Captain John A. Larrabee

Capt. John A. Larrabee, Portland, Ore., recently received a second award of the Purple Heart because of wounds received in action while with General Bradley's First Army headquarters. Dr. Larrabee graduated from the University of Chicago School of Medicine in 1942 and entered the service July 29, 1943.

MISCELLANEOUS

STREPTOMYCIN FOR CIVILIAN USE

The Army Medical Department recently announced that all requests for supplies of streptomycin for civilian use be addressed to Dr. Chester S. Keefer, Evans Memorial Hospital, 65 East Newton, Boston. Telephone Kenmore 9200.

Dr. Keefer, chairman of the Committee on Chemotherapeutic and Other Agents of the Division of Medical Sciences, National Research Council, has been authorized to handle civilian requests, provided they are submitted by a physician giving sufficient technical information to enable him to decide whether streptomycin is indicated in the treatment of the case.

Distribution of limited supplies of streptomycin to civilians through the Committee on Chemotherapeutic and Other Agents of the Division of Medical Sciences, National Research Council, has been provided for in the allocation program recently established by the Civilian Production Administration. Other agencies receiving allotments of the scarce drug include the Army, Navy, Veterans Administration and United States Public Health Service.

MEDICAL AND SURGICAL RELIEF COMMITTEE

Dr. George Gordon Agnew, acting dean of West China Union University, professor of pathology and director of advanced study and research in dentistry, recently returned to the United States for a visit. One of his initial stops here was at the headquarters of the Medical and Surgical Relief Committee (420 Lexington Avenue, New York 17), which had supplied him on his previous visit with $12,000 worth of dental and surgical equipment for West China University.

The Medical and Surgical Relief Committee is already at work collecting material to be donated to China. Included in such material are fifty-four foot drills donated by students of New York University Dental School. These foot drills would fill a most urgent need in China, where in many sections electricity is unknown, except for one difficulty: the drills lack arms. Dr. Agnew earnestly requests that any school, organization or individual able to supply the missing arms, either the spiral cable or the all-cord type, do so at once.

OFFER BASIC SCIENCE COURSES

The University of Colorado School of Medicine, Denver, recently made arrangements to offer basic science courses and lectures in bacteriology, biochemistry, physiology, anatomy and pathology to Regular Army Medical Corps officers training at Fitzsimons General Hospital, Denver. In addition to the use of facilities at the University Medical School by Medical Corps officers, the wards at Fitzsimons General Hospital will be open to observation by university medical students and will provide excellent teaching material.

NAMED HARVARD ADMINISTRATIVE VICE PRESIDENT

Brig. Gen. Edward Reynolds, former chief of the Supply Service, Office of the Surgeon General, Washington, D. C., was recently named administrative vice president of Harvard University, Boston.

UNRRA NEWS

China Relief

Joseph N. Lanoix, Port-au-Prince, Haiti, W. I., recently appointed Regional Sanitary Engineer for the UNRRA China Program, left for Shanghai with forty other UNRRA specialists. UNRRA has already dispatched a large number of welfare and medical experts, transportation specialists and engineers to China to assist in the rapidly expanding relief activities there, and several hundred more technicians and administrative workers are scheduled for assignment to China.

Since the beginning of the year UNRRA food has been arriving in volume at recently opened Chinese ports. UNRRA is also sending thousands of tons of medical supplies, seeds and fertilizers, machine parts, contributed clothing and raw cotton for the textile mills. These supplies are being distributed by the Chinese National Relief and Rehabilitation Administration (CNRRA), the agency of the Chinese government through which UNRRA operates. UNRRA specialists are also helping to fight epidemics, install modern sanitation, rebuild railroads and dikes and reopen transportation systems.

American Hungarian Relief Contributes $50,000

American Hungarian Relief, Inc., recently contributed $50,000 to the United Nations Relief and Rehabilitation Administration for the purchase of surgical instruments and other medical supplies vitally needed for the public and private hospitals of Hungary. Mr. Herbert H. Lehman, director general of UNRRA, stated that "the generous and timely action of American Hungarian Relief, Inc., in contributing this money to help in the purchase of medical supplies for the Hungarian people is deeply appreciated. Although UNRRA is now authorized to carry on a limited program of relief in Hungary, the nature of the program, which provides only for aid to children and mothers, precludes our reaching all the people in need. This contribution will be a valuable aid in our work."

Typhus Danger Passed in Poland

UNRRA health officials and the Polish Ministry of Health recently announced in Warsaw that the danger of a serious typhus epidemic in Poland has passed and that the present typhus rate is well below expectation. It was stated however that, "while typhus is under control, general health conditions throughout Poland are critical."

Although UNRRA medical supplies are coming into Poland in an ever increasing stream, hospital and health facilities are still extremely inadequate and large amounts of additional medical equipment and supplies are urgently needed if current sickness and mortality rates are to be substantially reduced, it was said.

Active measures against typhus have been carried out by the Ministry of Health assisted by UNRRA medical officers and have included the distribution since early last fall of more than 400 tons of DDT for use especially among large numbers of repatriates which are moving into Poland daily from the east and west.

It is among these migrant masses that typhus epidemics are most likely to start and, in dealing with these scores of thousands of repatriates, potential epidemics are now being prevented at the source.

VETERANS

ORGANIZATION OF MEDICAL VETERANS

[*Note.—The following statement indicates a wish to organize physicians who served in the armed forces into a national medical veterans organization.—Ed.*]

To the Editor:—Physicians returning from military service will face many problems in reestablishing their practice which may advantageously be approached through mutual association. The combined experiences of these men in the past war will be of great value to this country in solving the problem of medical care for the public and for the soldiers in case of a future war. The excellent performance of the Medical Corps and the unselfish devotion of the medical officers to the welfare of the country in the war are universally recognized by the public. The opinion of these men concerning methods of providing the best medical care for the public will receive respectful attention by the public. The physician veteran will continue to have particular interest in addition to that of all other veterans. An organization of medical veterans will have a useful function in the problems facing the medical profession, the veterans themselves and the public.

After a preliminary meeting of a few interested men, a general meeting of all medical veterans in southern California was called in Los Angeles on January 4. A decision was made to form a permanent medical veterans' organization. The following officers were elected: president, William H. Leake; vice president, Wells C. Cook; secretary, Frederick A. Bennetts; treasurer, William E. Delphey. A committee was appointed to draft a constitution and by-laws. The name Medical Veterans' Association was adopted, and subsequently the constitution and by-laws were approved by the membership. It is proposed that this eventually be a nationwide organization. It is hoped that similar groups will be formed in other areas to help solve the immediate problems of returning physicians and that these eventually will be combined. The secretary will be pleased to provide copies of the constitution and by-laws of the California group to any veterans' group interested in the project.

The chief aims of the organization are considered to be:

1. To assist the returning physician in every possible way in reestablishing his practice.
2. To assure that the highest standards of medical care be provided for the treatment of all veterans with service connected disabilities.
3. To crystallize the experience of former medical officers in governmental medicine, to determine their conclusions concerning the value of governmental influence over the practice of medicine and to publicize these conclusions.
4. To advise and assist in the improvement of the organization of the medical services of the United States armed forces for future emergencies.

Various committees have been busy in helping to solve the problems of returning physicians. The housing committee has had numerous meetings with the medical building managers, has developed certain principles in the allotment of available space to protect the returning doctors and has had representatives of the building managers address the group. The narcotic license committee has helped to reduce the time required to obtain a narcotic license with which to restart practice. The surplus property committee has had numerous meetings with representatives of the Reconstruction Finance Corporation and the War Assets Corporation in an effort to make surplus medical property available to returning doctors. A representative of War Assets Corporation is addressing each meeting of the group concerning its progress with this problem. The committee recently testified before a Senate investigating committee composed of Senators.

It outlined the complete confusion existing at present and was promised a solution of the problem by the Senators. A committee at present is working on an exception in the law which excludes most physicians from the tax exemption said to be available to veterans.

There will be numerous problems arising concerning medical care for veterans. The group of medical veterans appears to be well qualified to advise the government concerning these problems.

Many unsupported and apparently incorrect statements have been made concerning the attitude of doctors in the armed forces concerning the value of governmental supervision of the practice of medicine. The real conclusions of these men who have had extensive experience with governmental supervision, and whose sincerity cannot be questioned, is a matter of great public importance. This group proposes to determine and express the ideas of these men on the subject.

In the past war many difficulties faced by medical officers could have been avoided if there had been a civilian group experienced and willing to call the facts to public attention. In case of a future war a group of men who have had experience with the problems should be of great value to the doctors, who under the facts of military discipline cannot speak for themselves.

Such a new organization obviously faces two dangers. The hardships experienced in the Army and on return to civilian life could result in a excessive attitude of selfish aggrandizement for the veteran. This problem has been avoided by the Los Angeles group, which has received the wholehearted support of the entire profession in its reasonable program to assist the veteran in returning to his practice. After the immediate problems are solved there may be a loss of interest. There appear to be numerous problems which will give the organization a permanently useful function to its members, the profession and the public.

The organization can be most useful with no connection with the county medical association or the American Medical Association, and the constitution makes it entirely independent. The Los Angeles County Medical Association has offered its entire facilities and has been most helpful in getting the organization started. It is anticipated that groups in other areas will receive the same degree of cooperation

A liaison has been established with the other veterans' organizations. Extensive cooperation with them is planned, particularly in considering medical problems. Some type of affiliation may be considered in the future. Many members of the group are also members of a regular veterans' organization.

After careful consideration, membership was made available to medical veterans of all United States armed conflicts Veterans of World War II will undoubtedly be in the great majority. Membership is also open to veteran Dental and Nursing Corps Officers of the Army, Navy Coast Guard and Public Health Service.

It is felt that the organization of similar groups in other communities will be of benefit to the returning doctors, the medical profession and the public.

Frederick A. Bennetts, M.D., Los Angeles.
Secretary, Medical Veterans' Association of Los Angeles County, 1921 Wilshire Boulevard, Los Angeles 5.

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

Arizona

Eckstein, Albert, Lt. Col., 1514 N. 10th Ave., Phoenix.

California

Buckley, Thomas I., Major, 550 Blair Ave., Piedmont.
Carpenter, Harold C., Capt., 611 Euclid Ave., Berkeley.
Cherry, Clifford B., Lt. Col., 423 Towne Ave., Los Angeles.
Grant, Ben E., Col., 6777 Hollywood Blvd., Hollywood.
Grossblat, Jacob, Major, 1147½ N. Coronado St., Los Angeles.
Helming, Oscar C. Jr., Lt. Col., 7819 Girard Ave., La Jolla.
Hennessy, Harold R., Lt. Col., 647 Almond St., Yuba City.
Lewis, Wilton M., Capt., 4615 Norma Dr., San Diego.
McLeod, Kenneth C., Major, 1899 Jackson St., Oakland.
Savage, James R., Capt., 780 E. Gilbert St., San Bernardino.
Shea, James F., Major, 450 Sutter St., San Francisco.
Sirbu, Abraham B., Lt. Col., 450 Sutter St., San Francisco.
Small, Leland K., Capt., 1969 Bywood Dr., Oakland.
Young, Albert, Major, 20 Salmon St., San Francisco.
Zeiler, Meyer, Capt., 72 Fremont Pl., Los Angeles.
Ziegler, Elmer F., Capt., 2218 H St., Sacramento.

Connecticut

Antell, Maxwell J., Lt. Col., 800 Clinton Ave., Bridgeport.

Illinois

Balsamo, Nicholas J., Capt., 1747 N. Newland Ave., Chicago.
Barton, Evan M., Lt. Col., 1018 N. State St., Chicago.
Beaver, Ernest R., Capt., 1919 Jersey St., Alton.
Chesrow, Eugene J., Major, Oak Forest.
Chrzan, Thaddeus J., Capt., 5105 Altgeld Ave., Chicago.
Cohen, William, Capt., 2917 W. Jackson Blvd., Chicago.
Draznin, Sol Z., Capt., 3535 Shakespeare Ave., Chicago.
Ehrlich, Max C., Lt. Col., 4919 Dorchester Ave., Chicago.
Ferri, Nicholas A., Capt., 5113 Washington Blvd., Chicago.
Gordon, Hyman S., Lt. Col., Coal City.
Gordon, John R., Capt., 1819 W. Polk St., Chicago.
Gordon, Louis Z., Capt., Peoria St. Hosp., Peoria.
Hollister, Bruce A., Capt., 209 E. Washington St., W. Chicago.
Jabczynski, Hilbert A., Capt., 9039 Muskegon Ave., Chicago.
Just, Joseph H., Capt., 2114 Elmwood Ave., Berwyn.
Kanter, Lester, Major, 1421 S. Homan Ave., Chicago.
Langston, Hiram T., Major, 303 E. Chicago Ave., Chicago.
LeBoy, Ted, Capt., 500 S. Kenilworth Ave., Oak Park.
Lindeen, Oliver L., Major, 425 Roscoe St., Chicago.
Manning, Roy F., Capt., 317 S. Lincoln, Westmont.
Perlman, Lawrence, Major, Cook County Hospital, Chicago.
Peterson, Morris, Capt., 4107 W. Madison St., Chicago.
Pollack, Samuel, Major, 2334 E. 70th St., Chicago.
Rosen, Benjamin B., Major, 7817 S. Phillips Ave., Chicago.
Thill, John C. Jr., Capt., 5725 N. Sacramento Ave., Chicago.
Torczynski, Vincent F., Major, 10040 S. Seeley Ave., Chicago.
Urist, Maurice D., Major, Manteno State Hosp., Manteno.
Van Dyne, J. R., Major, 3300 Lake Shore Dr., Chicago.
Young, Samuel, Capt., 6018 N. Washtenaw Ave., Chicago.
Zaidenberg, S. O., Capt., 1443 N. Washtenaw Ave., Chicago.
Zeman, Alvin A., Capt., 3309 Cullom Ave., Chicago.

Missouri

Boemer, Lilburn, C., Lt. Col., 3720 Washington Blvd., St. Louis.
Coffin, Theodore A., Major, 303 Brushcreek Blvd., Kansas City.

New Jersey

Abramson, Solomon, Major, 1183 Jaques Ave., Rahway, N. J.
Babbitt, Hugh M. Jr., Major, 950 Park Ave., Plainfield.
Beirne, Donald P., Capt., 238 Mt. Vernon Ave., Orange.
Corless, Joseph F., Major, 5503 Palisade Ave., West New York.
Crilly, James A., Capt., 44 Bellewood Pl., Elizabeth.
DeAguiar, Alcinda P., 1st Lt., 239 N. 4th St., Newark.
Dicker, Ralph L., Capt., 414 40th St., Union City.
Gadek, Stanley A., Lt. Col., 95 Fayette St., Perth Amboy.
Giglio, Louis A., Capt., 29 Cross St., Paterson.
Gonzalez-Rodriguez, Juan, Major, 501 Grand Ave., Asbury Pk.
Horn, Harry, Major, 622 Stuyvesant Ave., Irvington.
Iehl, Joseph R., Capt., 385 Grove St., Clifton.
Kent, Donald F., Capt., 474 Tremont Ave., Orange.
Kraissl, Cornelius J., Major, 393 Main St., Hackensack.
Messina, Thomas, Capt., 668 Ridge St., Newark.
Michelson, Henry, Major, 557 Broadway, Paterson.
Reinhard, Louis, Capt., 111 S. Calif. Ave., Atlantic City.
Schapiro, Morris, Capt., 83 W. 33rd St., Bayonne.
Taber, Frederick S., Col., 49 Paterson St., New Brunswick.
Van Riper, William D., Capt., 44 Tenafly Rd., Englewood.
Zingales, Joseph A., Capt., 101 Holly St., Cranford.

New York

Bader, Edward, Capt., 1764 Walton Ave., Bronx.
Baker, Francis F., Capt., 86 Cleveland Ave., Buffalo.
Barber, William H. Jr., 1st Lt., 8448 120th St., Richmond Hill.
Byron, C. S., Major, 858 Forest Ave., Ridgewood, Brooklyn.
Cahan, William G., Capt., 405 E. 54th St., New York.
Chainski, William A., Capt., 6702 54th Ave., Maspeth, L. I.
Chartock, Hyman, Major, 729 Empire Bldg., Brooklyn.
Chernack, Morris J., Capt., 1150 Grand Concourse, New York.
Deyoe, Daniel H., Major, Niskayuna.
Diamond, Oscar K., Capt., 167 Devonia Ave., E., Mt. Vernon.
Disney, Frank A., 1st Lt., 420 Arnett Blvd., Rochester.
Dodge, Ben L., Capt., 46 W. Main, Bainbridge.
Eisenberg, Nathan P., Capt., 320 E. 83rd St., New York.
Ernst, Carl C., Capt., 11 Station Plaza, Great Neck, L. I.
Gaimari, Alfonso M., Major, 1558 72nd St., Brooklyn.
Gamso, Rafael R., Major, 827 E. 21st St., Brooklyn.
Gaspar, William A., Capt., St. Regis Falls.
Geoly, Frank J., Capt., 169-19 35th Ave., Flushing.
Georgi, William H., Capt., 460 Ashland Ave., Buffalo.
Grosso, Joseph, Capt., 902 Alvord St., Syracuse.
Gualtieri, Rosario M., 1st Lt., 29-01 21st Ave., Astoria, L. I.
Gustafson, Einar G., Lt. Col., 2743 Butler St., E. Elmhurst.
Gutkin, Morton L., Major, 6734 6th Ave., Brooklyn.
Hahn, Joseph G., Major, 267 Hooper St., Brooklyn.
Hengerer, Arthur D., Capt., 385 Morris St., Albany.
Higgins, Edward F., 1st Lt., 70 Tompkins St., Cortland.
Hoffman, Parker M., Capt., 400 E. Water St., Painted Post.
Hofschneider, Leo J., Capt., 109 Thorndale Terr., Rochester.
Horowitz, William, Capt., 1114 Morris Ave., Bronx.
Katz, Solomon S., Capt., 1259 E. 13th St., Brooklyn.
Kaufman, Daniel R., Major, 34-39 75th St., Jackson Heights.
Keating, George A., Capt., 555 Ocean Ave., Brooklyn.
Keefe, Francis P., Capt., 307 Irving St., Olean.
Kiven, Nathan J., Major, Bohema.
Klein, William S., Capt., 401 Knickerbocker Ave., Brooklyn.
Kleiner, David, Capt., 1874 76th St., Brooklyn.
Knocke, Frederick J., Capt., 2616 Arlington Ave., New York.
Koch, Jules M., Capt., 1711 Morris Ave., New York.
Kotrnetz, Margarete E., 1st Lt., 111 Mary St., Herkimer.
La Rosa, Gasper A., Capt., 290 6th Ave., Apt. 1A, New York.
Lentine, Anthony J., Capt., 530 E. 159th St., Bronx.
Levenbook, Harry, Capt., 136 S. 2nd St., Brooklyn.
McMahon, Francis J., Major, 9 Seminary Ave., Yonkers.
McNeil, Crichton, Capt., Buffalo General Hospital, Buffalo.
Marshall, Louis R., Major, 474 W. 238th St., Apt. 4D, Bronx.
Mayo, Henry W. Jr., Capt., 1336 E. 21st St., Brooklyn.
Meister, Aaron H., Capt., 109-35 201st St., Hollis.
O'Connor, Robert A., 1st Lt., 2849 Marion Ave., Bronx.
Palagonia, Gasper J., Capt., 147 Kingsland Ave., Brooklyn.
Palatucci, Oscar A., Lt. Col., 127 Lisbon Pl., Bronx.
Pilosi, Patrick A., Capt., 11101 95th Ave., Richmond Hill.
Pomeranze, Julius, Capt., 28 E. 10th St., New York.
Rein, Robert L., Major, 750 Ocean Ave., Brooklyn.
Reiner, David "N," Capt., 41 Central Park West, New York.
Renick, Samuel R., Capt., 152 Beach 85th St., Rockaway Beach.
Romain, Anthony, Capt., 18 Myrtle Ave., Middletown.
Rosenblum, Meyer, Major, 4201 Bedford Ave., Brooklyn.
Rosenfeld, Leonard S., Major, 1208 Eastern Pky., Brooklyn.
Schwartzfarb, Samuel P., Capt., 145 W. 168th St., New York.
Shapiro, Hyman N., Capt., 913 E. Delavan Ave., Buffalo.
Shuman, Clark S., Capt., Black River.
Siegel, Walter H., Capt., 392 Marcellus Rd., Mineola.
Siegle, Hyman M., Capt., 1375 Ocean Ave., Brooklyn.
Silver, Caroll M., Capt., 610 Trinity Ave., New York.
Silver, Irving, Capt., 1610 Avenue P, Brooklyn.
Sutta, Chester J., Capt., 1119 Foster Ave., Brooklyn.
Teichman, Mark, 1st Lt., 32-15 30th St., Long Island City.
Threlkeld, Lal D., Capt., Syracuse U. Med. Center, Syracuse.
Tiber, Arthur M., Lt. Col., 4324 43rd St., Sunnyside, L. I.
Tunick, Arthur M., Major, 690 Gerard Ave., New York.
Varon, Leo R., Lt. Col., 600 W. 111th St., New York.
Walterman, David, Capt., Greenfield Park.
Warren, Harold D., Capt., 8529 105th St., Richmond Hill.
Wasserman, Isidore, 1st Lt., 316 W. 18th St., New York.
Wasserman, Seymour H., Capt., 78 E. 91st St., Brooklyn.
Webb, Howard P., Major, 2625 Oneida St., Utica.
Weinstock, Harry, Capt., 4786 Barnes Ave., Bronx.
Weiss, Laurence B., Major, 413 Main St., Poughkeepsie.
Woodruff, William W., Major, 8 Church St., Saranac Lake.
Wright, Irving S., Col., 400 Madison Ave., New York.
Zippin, George J., Capt., 323 E. 17th St., New York.

PHYSICIANS SEPARATED FROM SERVICE

Ohio

Barnett, Abner J., Major, Vet. Adm. Fac., Dayton.
Bassett, Garry G., Capt., 1308 Hathaway Ave., Lakewood.
Bell, Clarence H., Capt., 458 Springmill St., Mansfield.
Biles, Robert A., Capt., 4024 S. Madison Ave., Norwood.
Cohen Sander, Lt. Col., 348 Elland Circle, Cincinnati.
Cooper, Paul F., Capt., 2291 Murray Hill, Cleveland.
Damron, Carl R., Major, 30 S. Mulberry St., Mansfield.
Davidow, Sidney L., Major, North Jackson.
Ginsburg, Matthew, Major, 1838 Parkwood Ave., Toledo.
Goldhamer, M. L., Major, 2369 Queenston Rd., Cleveland Hgts.
Gruen, Franz, Capt., 509½ Washington Ave., Elyria.
Halley, John, Capt., 218 Washington St., Vermilion.
Kelly, Donald A., Lt. Col., 22219 Parnell Rd., Cleveland.
Kessler, M. M., Lt. Col., 3360 DeSota Ave., Cleveland Hgts.
King, Arthur G., Lt. Col., 3236 Burnet Ave., Cincinnati.
MacNiel, Alec C., Capt., 3256 Warrington Rd., Shaker Hgts.
May, James R., Major, 13957 Lake Ave., Lakewood.
Miessner, Alfred D., Major, 122 E. Perry St., Port Clinton.
Minning, Carl A., Capt., Williamsburg.
Sparks, Aubrey L., Major, 462 Belmont, Warren.
Speier, Joseph W. Jr., Capt., 1868 Greenbriar Pl., Cincinnati.
Starbuck, Ralph J., Capt., 195 W. 10th St., Salem.
Sutton, M. B., Major, 351 2nd St., N.E., New Philadelphia.
Zucker, Ralph L., Capt., Children's Hospital, Cincinnati.

Oregon

Abele, John F., Lt. Col., 1504 N. E. 8th Ave., Portland.
Bolton, Wilbur M., Col., 806 Med. Arts Bldg., Portland.
Brown, Kenneth C., Capt., 3807 E. Burnside St., Portland.
Goren, Morris L., Major, U. S. Veterans Hosp., Portland.
Hendry, Edwin A., Major, 7338 N. Chase Ave., Portland.
Johnstone, Arthur E., Capt., St. Helens.
Kaufman, Russell H., Major, 1210 Selling Bldg., Portland.
Piercy, Watt H., Major, 569 Washington St., Hillsboro.
Rich, Richard I., Capt., Woodburn.

Pennsylvania

Allyn, Russell E., Capt., 768 Baltimore St., Hanover.
Baer, George, Capt., 5706 Woodcrest Ave., Philadelphia.
Brubaker, Jacob H., Capt., 224 S. 4th St., Denver.
Buchman, David H., Capt., 35 N. Stewart St., Blairsville.
Carlino, James T., Capt., 28 4th St., Reynoldsville.
Crane, Morris, Capt., 5705 Chester Ave., Philadelphia.
Doyle, Albert F., Major, 316 Pine St., Johnstown.
Entwisle, Edward B. II, Capt., 805 Jefferson Dr., Pittsburgh.
Evans, Russell M., Capt., 1011 Victoria Ave., New Kensington.
Griffith, Jo C., Capt., 635 McKee Ave., Monessen.
Grynkewich, Serge E., Major, 395 E. Broad St., Tamaqua.
Hammett, Van Buren O., Lt. Col., 3358 Perrysville, Pittsburgh.
Hannan, John R., Capt., Parkview Dr. Rd. #5, Johnstown.
Imler, Allison E., Major, Jeanes Hosp., Philadelphia.
Jablonsky, Albert, Capt., 209 N. 1st St., Jeannette.
Janda, Charles A., Capt., 1017 E. Ohio St., Pittsburgh.
Jardine, Ronald L., Major, 300 Grampion Blvd., Williamsport.
Klemek, Stanley C., 1st Lt., 2001 N. 2nd St., Harrisburg.
Koolpe, Louis, Capt., 7400 Georgian Rd., Philadelphia.
Krasnoff, Sidney O., 1st Lt., 216 Upland Rd., Merion Sta.
Kuhl, Robert H., Capt., 330 Chestnut St., Berwick.
Lanahan, F. B., Capt., Wynnewood Pk., Apt. 23B, Wynnewood.
Landy, Julius, Capt., 377 Main St., Pittsburgh.
Larkin, Frank L., Major, 327 Medical Arts. Bldg., Scranton.
Leebron, William M., Major, 6101 Wash. Ave., Philadelphia.
McAneny, James L., Capt., 1116 Franklin St., Johnstown.
Menaker, Jerome S., Capt., 2235 N. 2nd St., Harrisburg.
Merklin, Lewis, Capt., 5818 Malvern Ave., Philadelphia.
Miller, James H., Capt., 1318 Walnut St., Harrisburg.
Petraglia, Paul, 1st Lt., 205 Virginia Ave., Pittsburgh.
Philpott, Robert E., Capt., 306 LaBelle St., Mt. Washington, Pittsburgh.
Redding, Willis A., Major, 206 Main St., Towanda.
Renick, Charles A., Capt., 5807 Wellesley Ave., Pittsburgh.
Rich, John N., Capt., 1828 W. Tioga St., Philadelphia.
Rosen, Harold, Capt., 1630 Widener Pl., Philadelphia.
Rovito, Joseph, Capt., 621 S. 42nd St., Philadelphia.
Rush, Alexander, Major, RFD 1, West Chester.
Schein, Robert A., Capt., 1407 Hays St., Homestead.
Solow, Irwin A., Capt., 5719 Darlington Rd., Pittsburgh.
Stanley, Robert C. G., Capt., 318 Highland Ave., Chester.
Tepper, Maurice C., Capt., 5604 Woodbine Ave., Philadelphia.
Thompson, John E., Lt. Col., 106 Marsh Ave., Youngsville.
Weres, James, Capt., 150 S. 2nd St., Coplay.
Woods, Leo C., Lt. Col., Vet. Adm. Facility, Coatesville.
Zimmerman, Karl, Major, 1436 Westfield St., Pittsburgh.

South Carolina

Colvin, Euta Miller, 1st Lt., 33 Mill St., Charleston.

South Dakota

Brooks, L. M., Capt., % Guy A. Brooks, RFD 3, Vermillion.
Jacobus, Ryland M., Capt., Letcher.

Tennessee

Chesney, Jack, Lt. Col., 608 Cherokee Dr., Knoxville.

Utah

Cannon, Espey F., Major, 189 1st Ave., Salt Lake City.
Crookston, Wayne G., Capt., 172 N. 2d West, Salt Lake City.
Cullimore, Leland K., Major, 138 S. 3d West, Provo.
Johnson, Vernal H., Major, 734 23rd St., Ogden.
Trowbridge, Juel E., Capt., Bountiful.

Vermont

Gould, Nathaniel, Major, Barnet.
Heininger, William H., Capt., 308 College St., Burlington.
Hogle, John R., Capt., 7 Chapin St., Brattleboro.
Powers, William J., Major, 82 East St., Rutland.

Virginia

Bosher, Lewis H. Jr., Capt., Catham Hills, Richmond.
Davis, Hiram W., Capt., Box 693, N. Nassua St., Williamsburg.
Fennell, Robert H. Jr., 1st Lt., Route 2, Richmond.
Gibson, Thomas A., Col., 613 Tennyson Ave., Winchester.
Gillespie, Albert R., Capt., 318 Park Pl., University.
Goodwin, Robert A. Jr., Major, % Rev. R. A. Goodwin, 1623 Westover Ave., Petersburg.
Jones, Joseph J. Jr., Capt., 30 Tennis St., Phoebus.
Kegley, George B., Capt., Bland.
Lee, Henry, Major, Route 4, Roanoke.
Seawell, William A., Major, Raven.

Washington

Bender, Charles E., Lt. Col., 3816 40th St. N. E., Seattle.
Bingham, Harvey D., Major, c/o S. S. Newman, Mercer Island.
Boyce, Allen C., Capt., 1324 W. 5th Ave., Spokane.
Fey, Louis D., Major, 1224 5th Ave., W., Seattle.
Franco, Robert, Capt., 137 31st Ave., Seattle.
Haverstock, Richard T., Major, 1215 4th Ave., Seattle.
Hearne, Rodney B., Capt., 1915 E. McGraw, Seattle.
Holloway, Jackson K., Lt. Col., 1120 Boylston Ave., Seattle.
Leibly, Frank J., Major, 2218 3rd Avenue, W., Seattle.
Monzingo, Forrest L., Major, 4045 S.D., Tacoma.
Rogge, Edgar A., Major, 2244 E. Blaine St., Seattle.
Stafford, Donald E., Major, 3887 44th Ave., N.E., Seattle.

West Virginia

Kaufman, Julian R., Capt., 317 Atlas Bldg., Charleston.
Kessel, Ray, Major, 600 Randolph St., Charleston.
Leftwich, William B., Capt., 2601 3rd Ave., Huntington.
Miller, Richard F., Capt., Paden City.
Tuckwiller, Pat A., Lt. Col., 3903 Kanawha Ave., Charleston.
Vieweg, George L., Capt., 33 Pleasant Dr., Wheeling.

Wisconsin

Bauer, Carroll A., Major, 239 5th Ave., West Bend.
Berner, Casper L., Capt., 1132 N. 27th St., Milwaukee.
Chung, John K. C., Major, 929 N. 14th St., Milwaukee.
Clark, Carroll J., Capt., 276 Linden St., Fond du Lac.
Geist, Frederick D., Major, Science Hall, U. of Wisc., Madison.
Haushalter, Lester E., Capt., 3736 N. 5th St., Milwaukee.
Kammer, Huldrick, Capt., New Glarus.
Kief, Harold J., Capt., Saint Cloud.
LaBreche, John J., Major, Cadott.
Langmack, William A., Capt., 1516 W. Vliet St., Milwaukee.
Lebow, Erwin E., Major, 3025 N. 53rd St., Milwaukee.
Ludden, Raymond H., Capt., 215 S. Rusk Ave., Viroqua.
Prudowsky, Harry, Capt., 1509 W. Fond de Lac, Milwaukee.
Rose, Robert J., Capt., 225 S. Monroe Ave., Green Bay.
Shapiro, Herman L., Capt., 505 S. Michigan, Prairie du Chien.
Sverdlin, Abe A., Major, 2403 W. Lloyd St., Milwaukee.
Vande Loo, Francis B., Major, Brillion.
Woods, Robert M., Capt., 2114 N. Summit Ave., Milwaukee.

Puerto Rico

Chaves-Estrada, Jose, Capt., 8 Belaval St., Santurce.
Chiques, Carlos M., Capt., Box 91, Caguas.
Garcia-Blanco, Jose P., Capt., 45 Sol St., Ponce.
Pacheco, Luis A., 1st Lt., 62 Esteban Padilla St., Bayamon.
Rovira-Pales, Joaquin, Capt., Guayama.

ORGANIZATION SECTION

National Health Program

PLATFORM ADOPTED BY THE AMERICAN MEDICAL ASSOCIATION

One of the ten points in this platform will be published each week.

2. The provision of preventive medical services through professionally competent health departments with sufficient staff and equipment to meet community needs is recognized as essential in a health program. The principle of federal aid through provision of funds or personnel is recognized with the understanding that local areas shall control their own agencies as has been established in the field of education. Health departments should not assume the care of the sick as a function, since administration of medical care under such auspices tends to a deterioration in the quality of the service rendered. Medical care to those unable to provide for themselves is best administered by local and private agencies with the aid of public funds when needed. This program for national health should include the administration of medical care, including hospitalization to all those needing it but unable to pay, such medical care to be provided preferably by a physician of the patient's choice with funds provided by local agencies with the assistance of federal funds when necessary.

Washington Letter

(From Our Regular Correspondent)

April 15, 1946.

United Nations Organization to Control Narcotic Traffic

Harry J. Anslinger, commissioner of narcotics, told the administrative law section of the District Bar Association how the United Nations Organization will handle world control of narcotics. He cited the work of the League of Nations as an instance of what international cooperation can accomplish. Mr. Anslinger pointed out that in the first world war draft one in every thousand was rejected for drug addiction, but in the second world war this fell off to one in every 10,000.

Federal Hospital Building Estimates Sought

Estimates of federal hospital construction for 1946 have been requested by the Civilian Production Administration from government agencies with construction plans. This information is required to help the newly created Inter-Agency Construction Coordinating Committee to screen proposals for their effect on the veterans' housing program. The current trend in construction is reported to be toward housing, hospital, school and sewerage and water projects.

Hearings Promised on Communicable Diseases Bill

Senator Olin Johnston, Democrat of South Carolina, chairman of the Senate District Subcommittee considering the proposed communicable disease control bill, has promised an early hearing. The bill would call for forcible hospitalization of footloose carriers of communicable disease in the District of Columbia. A similar bill was approved by a House subcommittee.

Army Studies Improvement of Combat Rations

A thirty day conference is in session at the Army War College to determine what should be done with the stockpile of existing rations and how future combat rations could be improved. The conference was opened by Major Gen. Thomas B. Larkin, quartermaster general.

House Committee to Act on Tuberculosis Detention Bill

Action is expected this week by the House District of Columbia Committee on a bill giving health officials authority to detain and investigate persons suffering from communicable diseases or under a reasonable suspicion of such a condition. The Senate District Committee rejected a companion measure after citizen groups protested that it might violate civil rights of those affected.

Army Nurses Support Memorial Fund

The fund for construction of a $2,000,000 national memorial in Washington for nurses has received many contributions from army nurses. Arthur H. Johnson, national chairman, explains however that "no solicitations have been made from the 100,000 nurses and medical women who served in World War II." The memorial will be a memorial to American medical women and will provide a "home and rest center here for nurses."

Bradley Hands Over Veteran Duties to Thirteen Deputies

Gen. Omar Bradley has turned over to thirteen deputies the direction of the Veterans Administration's 100 regional offices and hospitals in a move to speed up service to the nation's 14½ million war veterans. The move will help to break the bottleneck in operations at the main Veterans Administration office in Washington.

Medical Veterans Placed in Jobs

The National Association of Veterans of the Hospital Corps, with headquarters in Washington, reports success in finding jobs for war veterans in some fifty subprofessional medical classifications. The organization reports that immediate openings are available to women x-ray operators, medical stenographers, medical secretaries and medical and dental workers.

Proper Labeling of Sulfonamide and Sleeping Powders

A temporary restraining order has been issued against the Southeast Pharmacy to prevent it from selling a sulfonamide drug or sleeping powder not properly labeled. Justice Alexander Holtzoff set April 8 as a hearing date.

Request for Reappointment of Dr. Vannevar Bush

A bill asking for the reappointment of Dr. Vannevar Bush to the board of regents of the Smithsonian Institution for a six year term has been introduced by Representative Cannon, Democrat of Missouri.

Course in Hypnotism in High School

E. Merritt Douglas, principal of the Montgomery Blair High School at Silver Spring, Md., has approved Mrs. Dorothy Rudnick's course in hypnotism as an adjunct to her class in biology. Some parents objected.

Woman's Auxiliary

New York

The Woman's Auxiliary to the Medical Society of the State of New York will hold a convention from April 29 to May 1 inclusive at the Hotel Pennsylvania. Mrs. Charles R. Seymour is convention chairman. All doctors' wives, whether members of the Woman's Auxiliary to the County Medical Society or not, are urged to register at the Hotel Pennsylvania on Monday, April 29, from 9 a. m. to 4 p. m.

Mrs. John L. Neubert of Nassau County, program chairman, has planned an anniversary luncheon for Monday, April 29, at 12:30 p. m., and a cocktail party Wednesday May 1 at 6 p. m., followed by a dinner for the physicians of the New York State Medical Society and their wives.

THE WAGNER-MURRAY-DINGELL BILL

Hearings on S. 1606—To Provide for a National Health Program

(NOTE.—*This is a condensation of the verbatim report of the hearings.*—ED.)

(Continued from page 1035)

United States Senate, Committee on Education and Labor.
APRIL 4, 1946

HONORABLE JAMES E. MURRAY Presiding

PRESENT: Senators Murray, Ellender, Aiken and Donnell.

Statement of Mr. Arthur J. Altmeyer, Chairman of the Social Security Board

MR. ALTMEYER: Mr. Chairman, I have submitted a formal statement. I would like to read those parts that seem to point up what I am trying to say. The interest of the Social Security Board in national health is fundamental to its responsibility under law for administering social security programs and for "studying and making recommendations as to the most effective methods of providing economic security through social insurance. . . ."

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(*Mr. Altmeyer repeated many of the statements made in the report of the Social Security Board. Some of the main points follow.*)

We have been told that we are the healthiest country in the world. If we are, why do we need a national health program? No one would deny that we have made outstanding health progress over the past fifty years. Since 1900 our general death rate has been cut by about 40 per cent. Our achievements in sanitation, in communicable disease control and in medical science in general have been notable. We have among the finest hospitals the best trained and the most skilled physicians in the world.

Still we are not the healthiest nation; we have by no means done as well as some other countries in protecting health, and we are far from doing what we can do. Although we are the wealthiest among the nations of the earth and have high standards of well-being, we have not yet attained for all our people that level of security of life which has been achieved in some nations with smaller economic resources.

When we use mortality rates as an indication of our state of health, two important factors must be kept in mind: First, the general rates are averages for the country as a whole. Within these averages are concealed rates which are alarmingly high for modern times. Second, we must bear in mind that a large part of the reduction in death rates that occurred in the past twenty or fifty years has been largely due to reduction in deaths from infectious diseases—typhoid, diphtheria, malaria and others—that are susceptible of mass control.

At present a much larger part of the burden of ill health and postponable death comes from illnesses which are not susceptible of mass control but which require the highly individualized services of physicians, hospitals, laboratories and technicians. These are the services for which the American people now pay, when they receive them, as individuals.

While we have achieved high standards in medical and hospital care, this high quality care is not within the actual reach of large numbers of our people. Putting it bluntly, there are many Americans this very minute who are suffering and dying needlessly for lack of medical care.

Many barriers stand between the individual and the medical care he needs. Briefly, these are lack of recognition or neglect of illness, unpredictability of illness, maldistribution of medical personnel and facilities, the unpredictability of medical costs and the inability of a large proportion of families to pay for needed care.

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The medical care a family now receives is largely dependent on its income. Despite all the public provisions for medical care and care given through philanthropic organizations and free of charge by physicians, hospitals and others, low income families receive, on the average, much less care than the well-to-do, though their needs are greater. Families with low incomes not only receive less care, but they spend a greater proportion of their incomes on sickness costs than families in better financial circumstances. Although medical care expenses take only about 4 to 5 per cent of the average American family's income in normal years, more people borrow money to pay for medical care than for any other single item in the budget. But not all families are able to borrow. As a consequence, many bills remain unpaid. Studies before the war showed that, on the average, doctors fail to collect a fifth to a third of the value of their bills each year.

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Lack of health facilities and medical personnel further contributes to the present inadequacy of medical care in many areas. Even before the war, shortages in doctors, nurses, dentists and other health personnel and in hospitals and other facilities existed in many areas—especially in low income and rural sections. There were large differences between states, and the spread was even greater within the states. Hospital facilities cluster in areas where there is sufficient income to assure their existence. Likewise, professional personnel tend to locate in areas where higher incomes prevail and where facilities in keeping with modern medical practice exist.

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VOLUNTARY INSURANCE

The costs of sickness have been distributed for some people through voluntary insurance plans for many years. At present, benefits to which the insured are entitled under the many different type of voluntary plans vary in many ways. Only a few million persons, probably not more than 2 or 3 per cent of the population, have what can be termed relatively complete protection against medical bills.

By far the largest enrolment in voluntary health insurance for service benefits is in Blue Cross hospital plans. Membership has grown tremendously within the past ten or fifteen years, but it still covers less than 15 per cent of the population of the United States. Protection against hospital costs is valuable, but the cost of hospitalization accounts for only about a fifth of medical costs paid by families, and voluntary hospitalization insurance does not protect against all of this.

Insurance of this type can, at best, serve only a fractional part of the national need. About 2 million Blue Cross members are enrolled in medically sponsored prepayment programs for medical services which are coordinated with Blue Cross. Another 18 million are eligible for hospital benefits only. Blue Cross membership is concentrated in medium sized and large cities and their environs. Rural membership is very small. I believe only about 3 per cent of the membership of Blue Cross families are in rural areas.

The Blue Cross plans have demonstrated, on the one hand, the relative ease of insuring a substantial fraction of the middle income group against hospital costs and, on the other hand, the great difficulty of insuring the low income or rural groups through voluntary methods. Ordinarily the plans have failed to insure those who most need this protection—the low income groups and those in small cities and towns, in medium or small business establishments or self employed.

The difficulties of enrolling the public in voluntary hospitalization plans are small compared to those of medical care plans. There are in the United States at this time voluntary prepayment medical care plans with an enrolment of between 5 and 6 million persons whose members are entitled to service benefits. For a regular fee, usually payable monthly, members are guaranteed the receipt of specified services from physicians and other types of medical care in case of illness. Many of these plans include hospitalization among the services.

The organizations differ greatly in the scope of services provided, and various limitations are placed on the amount of care furnished. Membership is frequently restricted to those below a specified age or income. Persons with preexisting disabilities may be excluded entirely or entitled to only limited service. Industrial plans, which in early 1945 included about 30 per cent of the members of these prepayment plans, usually provide relatively complete care, but eligibility is in most cases restricted to employees of one organization, and the scope of the plans is limited in many other ways.

In early 1945 about half of the persons who were members of the plans providing service benefits were members of plans sponsored by state and county medical societies. During the past few years the number of medical society plans sponsored by state and county medical societies and the number of people enrolled have grown. The American Medical Association, which formerly opposed all forms of health insurance, has definitely gone on record as favoring voluntary health insurance plans of this type.

Senator Donnell: Has the American Medical Association gone on record with respect to an involuntary insurance, that is to say, compulsory insurance? Mr. Altmeyer: They are opposed to that.

Senator Donnell: Have they passed resolutions to that effect? Mr. Altmeyer: Yes, sir.

Senator Donnell: How recently have they done that? Mr. Altmeyer: As recently as last December at their Chicago meeting. Senator Donnell: All right.

Mr. Altmeyer: With the exception of medical society plans in the states of Washington and Oregon, the scope of care provided by these plans is generally much restricted—primarily to obstetric services and surgical care in the hospital. The Washington and Oregon plans have been in operation for many years and are not typical of the medical society plans as a whole or those being organized in other sections of the country.

The typical medical society plan is limited in its benefits, is expensive and often either limits the membership to those under a specified income (usually $2,000 or $2,500) or allows the doctor to make additional charges for those with incomes over a specified amount or those using a private room in the hospital. Thus the families with incomes over the limit do not really know what insurance protection they bought with their premiums.

During the past ten years there has been a rapidly increasing growth in industrial group insurance through which employees are reimbursed in cash for all or a portion of their hospital and medical fees (principally surgical). Policies of this type formerly covered only employees, but recently the coverage in many instances has been extended to employees' dependents. At the end of 1944 approximately 7 to 8 million persons were eligible for hospitalization indemnity payments. Of this number about 6 million were also eligible for surgical indemnities. Although this is a step in the right direction, insurance of this type is not a satisfactory substitute for a comprehensive health insurance program. Both the number of persons served and the benefits received are too limited. Comprehensive protection of this type would be more expensive than most persons could afford to pay.

This, in summary, is voluntary health insurance as it now exists in the United States. Membership is limited, services are incomplete, prices are high in comparison with services provided under some of the plans, and in many instances additional charges are made for the more expensive services. The plans themselves are unevenly distributed throughout the country. Each is individually planned and administered, and, with the exception of the Blue Cross hospitalization plans, there is practically no coordination among them.

No type of voluntary plan, either here or abroad, has ever even approximated the goal of including all of the population in a region. As a rule, those who are most in need of protection are not covered. Voluntary insurance is necessarily expensive, because it is constantly exposed to an adverse selection of risk among those who—

Senator Ellender: Mr. Altmeyer, suppose the pending measure should be adopted as written. What would become of all these plans that you have been discussing just now, the Blue Cross Plan and the other industrial insurance associations?

Mr. Altmeyer: I think that they could be fitted into a comprehensive health insurance plan, either as service agencies or as representatives of the persons furnishing the service.

Senator Ellender: How would they maintain themselves? Mr. Altmeyer: They would maintain themselves by being reimbursed by the federal government for the service they rendered either directly or the service rendered by the persons that they represented.

Senator Ellender: The only portion of their facilities that could be used would be the hospitals if they have any. Mr. Altmeyer: Well, I mean some of these medical society plans—the doctors might prefer something along that line.

Senator Ellender: Let us take the Blue Cross Plan, which you say covers quite a few people and has done good work. Would not the passage of this bill as written have the tendency of putting the Blue Cross Plan out of business? Mr. Altmeyer: Well, it might. I do not know.

Senator Ellender: Do you not know it would? Mr. Altmeyer: No, I do not know it would. The Blue Cross people will have to speak for themselves on that.

Senator Ellender: As I understand they collect a certain amount per month and they render certain services. Now, if you forced all the people of the country, I think that we said yesterday 85 per cent of them would come under the plan, do you think that those paying compulsory insurance would also take membership in the Blue Cross? Mr. Altmeyer: No, but that is not the whole story. Some of these Blue Cross plans would want to furnish additional services by way of private rooms, for example, and people who like to pay through voluntary organizations for that additional service would do so and that would not be provided under this bill. So far as the basic service under this bill is concerned, the hospitals which really organize these Blue Cross Plans—they are the producers of the organization and not the consumers—the hospitals might prefer to continue to be represented through Blue Cross Plans and submit their bills to the Blue Cross organization and let the Blue Cross organization handle all the relations with the government. That could easily be done and the government could do that.

Senator Ellender: How would they maintain themselves? Mr. Altmeyer: By being reimbursed by the government first for the services rendered by the hospitals, and secondly I think that the government would be justified in paying them the administrative expense that the government would be saved by their handling the job for the hospitals.

Senator Ellender: Well, could that be attained under this bill? Mr. Altmeyer: Yes, sir.

Senator Ellender: Do you mean the administrative expenses? Mr. Altmeyer: Yes, sir. To the extent that they save the government money, the government could reimburse them for their administrative expenses. That has already been done.

Senator Ellender: All they would receive would be the actual expenses, it would not be in the nature of a paying concern? Mr. Altmeyer: It would not be in the nature of a profit but they are all nonprofit now, and they do not propose to earn a profit for themselves. They are all nonprofit.

Senator Ellender: Well, why should the government, or how could the government afford to leave the compulsory plan if it was shown by handling it itself it would be less expensive? Mr. Altmeyer: That is the question. Take the medical society plans. If the doctors in the locality prefer to handle their relations with the government through a medical society, there is no question or there is no reason why the government cannot deal with the medical society plan officials and let those officials deal with the individual practitioners.

Senator Ellender: But these societies would then have to abide by and be under certain rules and regulations, as would be made by Washington? Mr. Altmeyer: That is right.

Senator Ellender: They could not do it as they are now handling it? Mr. Altmeyer: Well, not completely free of any control over arrangements, but as the bill provides they could determine for themselves what method of remuneration the practitioners should receive, and they would be completely free on that score.

Senator Ellender: That would be under the jurisdiction, though, of the administrator here in Washington? Mr. Altmeyer: But the bill provides if a majority of the physicians in the community elect a certain method of remuneration, that method of remuneration prevails.

Senator Ellender: Irrespective of what it amounts to? Mr. Altmeyer: Oh, no, there would have to be a lump sum allocation, based on certain objective factors, but that could be written into the legislation by the Congress and would not be subject to the whim of the administrator.

Senator Ellender: Well, they would not be their own free agents. Whatever plans they would foster would have to in a measure receive the okay of the administrator in Washington? Mr. Altmeyer: Subject to the general standards, but on this matter of how they distribute the lump sum that is assigned, they have that same problem under their own plans. Medical society plans have to write down the bills that are submitted because the amount of money collected is not sufficient to cover, so that is a problem that is common to either voluntary or compulsory health insurance.

Senator Ellender: Well, now, about the selection of physicians of one's own choice. Do you expect to touch on that later? Mr. Altmeyer: It is perfectly clear that a person may select his own physician.

Senator Ellender: That is only in the case that the physicians here of a certain community agree to abide by whatever rules and regulations come from Washington? Mr. Altmeyer: Yes. If they went on a strike against the patients, the patients could not select them.

Senator Ellender: Let us assume a community where you had 100 physicians, and surgeons, and let us further assume that of that number 60 per cent of them would be willing to abide by common consent to whatever rules and regulations Washington agreed with, and suppose further that a patient desired a doctor who is not one of the 60 per cent. What procedure would that patient have to go through in order to obtain the services of a doctor who happens to be in the 40 per cent group? Mr. Altmeyer: Well, if the doctor did not want to treat the patient and be reimbursed—

Senator Ellender: I am not putting it that way, Mr. Altmeyer. You say there is freedom in this bill of a patient selecting a doctor of his own choice. Mr. Altmeyer: That is right.

Senator Ellender: When you say that you mean the doctor must abide by the rules and regulations of the administrator and any doctor in the community who is left out could not be called in by that patient. Mr. Altmeyer: He would be called in but the patient would have to pay for it.

Senator Ellender: That is what you call freedom of selection? Mr. Altmeyer: Yes, of course.

Senator Ellender: In other words, you would force every physician in the country to belong to some association or to some group that would in turn deal with Washington. Mr. Altmeyer: Many physicians would probably elect—

Senator Ellender: But I say, is that correct? Mr. Altmeyer: No, because many physicians, as in Great Britain, would elect not to practice under the system.

Senator Ellender: But what I mean is in order to get any of these funds, to be paid any of these funds, is that right? Mr. Altmeyer: That is right.

Senator Ellender: That is what I had in mind.

Senator Donnell: Mr. Altmeyer, referring to Senator Ellender's queries in regard to the effect on the Blue Cross, as I understood your testimony you do not think that the average individual over the country who is getting the service or who is entitled to the service under the bill would duplicate the expense by both allowing his percentage to be taken by the government and at the same time also buying other service of the same type from the Blue Cross? Mr. Altmeyer: No, I would not think so.

Senator Donnell: So the only place that the Blue Cross would be able to sell its services direct to the individuals thereafter would be in supplemental services of such type as you mentioned, special rooms? Mr. Altmeyer: Yes, sir.

Senator Donnell: And as to the maintenance of hospitals, then the Blue Cross would have to depend on only two sources of income, would it not, if it is to continue in existence? That would be first the income if any which it might derive from the government by contracting to furnish the government the services which the government will furnish under the insurance plans; and, secondly, by securing from the individuals the payment for these supplemental services. That is correct, is it not? Mr. Altmeyer: That is correct.

Senator Donnell: Now, Mr. Altmeyer, it seems reasonable to believe, does it not, that the great bulk of such income, if any, as would be received by the Blue Cross, under that plan, if it was to work out that way, would be the income received for the normal services, namely that that it would get from the government? Mr. Altmeyer: Yes, sir.

Senator Donnell: As to those services, those would be conducted under the regulations of the government, as the government might prescribe. That is correct, is it not? Mr. Altmeyer: Yes, sir.

Senator Donnell: Have you made any study to estimate what would probably be the volume of these supplemental services that individuals would buy, over and above what the government would provide? Have you made any studies designed to give us any estimate on that? Mr. Altmeyer: No, sir.

Senator Donnell: So that it would look pretty clear, would it not, that, unless these supplemental services are going to amount to a very considerable volume, Senator Ellender's point is good, that the Blue Cross would virtually be forced out of business? Mr. Altmeyer: No. I do not think that that necessarily follows, because they are really essentially producers, organizations, representing the hospitals. There are very few that have any representations of the patients on them; and the hospitals apparently found them of advantage to them, and the hospitals might very well consider them of advantage in dealing with the government.

Senator Donnell: At any rate the great bulk of the services which the Blue Cross if it was to continue in existence at all would normally perform would be those for the government. That is correct, is it not? Mr. Altmeyer: That is right, on behalf of their hospital members.

Senator Donnell: Now, Mr. Altmeyer, referring to the second point that Senator Ellender made, namely the question as to the freedom of choice by individual persons or physicians, as I understand it, and if I am wrong I wish that you would check me on this—as I understand it if an individual has this compulsory insurance and wants to get a doctor who has not complied with the regulations of the federal government the individual would only have the freedom of choice of going out and getting that doctor at his own expense? Mr. Altmeyer: That is right.

Senator Donnell: In other words, he has no freedom of choice whatsoever as to employing that doctor to perform the services for which the government would pay. That is correct, is it not? Mr. Altmeyer: That is right.

Senator Donnell: So the only freedom of choice is just to spend his own money? Mr. Altmeyer: He has freedom of choice to select, but he would have to pay for that service.

Senator Donnell: That is no freedom of choice under the bill. That is just the freedom of choice that any individual has to go out and get any doctor that he wants? Mr. Altmeyer: Yes, sir.

Senator Ellender: So that he would have to pay twice.

Senator Donnell: He would be paying to the government, and if he did not like the government's doctor, or the man the government approved, then if he wants to get another doctor he would have to contribute not only the amount to the government but also pay separately out of his own pocket, independently of his governmental contributions, is that right? Mr. Altmeyer: That is right.

Senator Aiken: May I ask a question. I would like to ask Mr. Altmeyer, Is there any doubt in his mind that the federal government would approve any doctor who complied with the standards established by the state in which he was practicing? Mr. Altmeyer: It is specifically provided in the bill that any doctor licensed to practice shall have the right to participate.

Senator Aiken: That is what I wanted to bring out, that you could not deny the doctor his right to participate.

Senator Donnell: Where is that in the bill, if you have it. I am not familiar with it.

Mr. Altmeyer: That is section 205, on page 45 of the bill: "Section 205. (a) Any physician, dentist or nurse legally qualified by a state to furnish any services included as personal health service benefits under this title (except as otherwise provided in subsection (c) of this section or in subsection (f) of section 214), and this provision shall extend to any group of physicians, dentists or nurses or combinations thereof whose members are similarly qualified."

Now, subsection (c) refers to specialists or consultant services and (f) refers to nurses, because there is a limitation on the amount of nurse service that will be provided.

Senator Donnell: If an individual wanted to get a specialist in a heart treatment, for illustration, is such a person under the exception set forth in subdivision (c) or subdivision (d) of section 205? Mr. Altmeyer: The reason that is put in there is because many states, and in fact I imagine most states do not have the detailed licensing of these various kinds of specialists, so somebody has to decide whether a person who says he is a specialist is a specialist.

Now I am getting into professional questions which I am not competent really to testify about, but in my understanding the Surgeon General as administrator would consult with and probably be entirely guided wherever there is a professional organization that has issued any certificate of specialty.

Senator Donnell: You think, as I understand it, and if I am wrong please check me, that the term "specialist" as used in subsection (c) of section 205 would include a heart specialist, for illustration? Mr. Altmeyer: I really do not know.

Senator Donnell: You think that that would be something that the Surgeon General would be better qualified to testify on? Mr. Altmeyer: That is right.

Senator Ellender: I may be giving you an extreme case, but suppose in a community where you have, say, ten doctors, and none of them agree to abide by the rules and regulations from Washington, how would the patients in that locality who contribute to this fund be able to obtain medical services? Mr. Altmeyer: Well, I imagine the Surgeon General would undertake to induce other physicians to come into that community who would be willing.

Senator Ellender: He would have to go for outside help? Mr. Altmeyer: Yes, sir.

Senator Donnell: That would have the effect of putting out of business those physicians and surgeons to whom Senator Ellender referred?

Mr. Altmeyer: That is an assumption contrary to fact, I think, for this reason, that this bill provides not only that the majority of physicians of the community elect the method of remuneration, but any individual in the minority who wants a different method can make arrangements to do it.

Senator Ellender: The point is that you force them to belong to it "or else," is that true? Mr. Altmeyer: You force them to charge the government rather than charge the patient, if that is what you mean. I do not see why there would be any objection to charging the government, myself.

Senator Ellender: I do not know whether the government pays it or the patient, but I was trying to demonstrate this freedom that we speak of. Mr. Altmeyer: That is freedom between the patient and the physician, to each one to select the other, but as you point out the factor of payment affects the choice that is made.

Senator Ellender: Of course, I presume that as time went on, rather than starve, a lot of doctors would see themselves forced to join or else give up their profession, is that not true? Mr. Altmeyer: I do not think any doctors would give up their profession.

Senator Ellender: That could happen under this bill. Mr Altmeyer: It has never happened under any other health insurance plans put into effect in other countries.

Senator Aiken: We have an insurance plan in this country, I believe, by the Farm Security Administration. Do you know of any instances where the local doctors have refused to participate in this insurance plan which is set up by the Farm Security? It simply means that they participate and they get their money, and if they do not they either do not visit the person who is ill at all, or if they do visit them they take a chance on not getting their money. Therefore, they all have participated. I come from the state which has Farm Security health insurance on a statewide scale. I think that it has worked out very well there, and I think that all the doctors in the state participate if they have a patient in that class. I do not think that there has been any trouble on that, when it is a question of getting part of their pay or getting none of it.

Senator Ellender: But all of that has been through voluntary agreements entered into by the profession, which I think would be the case.

Senator Aiken: They entered into an agreement with the cooperative set up by the Farm Security. It has worked out very well. I do not want any one to think that just because I am asking questions I am going to favor a system of government doctors, but I want to make sure that this bill does not set up a system of government controlled doctors.

Senator Ellender: Speaking for myself, I do not want to be judged as to what I am going to do with this bill by the questions I am asking. All I am trying to do is obtain from all witnesses what the bill means, where it will lead to and that is all.

Senator Aiken: That is my position exactly.

Senator Donnell: May I ask one further question. Mr. Altmeyer, you referred to the other countries in which there is health insurance. Would you mind telling us the major countries in which health insurance of a compulsory nature has prevailed? Mr. Altmeyer: There are about thirty-five in all of the major industrial countries that have compulsory health insurance. Great Britain is one, and France and Germany, and the Scandinavian countries, and Spain, Australia and New Zealand, Denmark, Holland and Belgium, the South American countries, and in fact off-hand I cannot think of the ones that do not have.

Senator Aiken: Are those plans financed in a manner similar to that proposed in this bill? Mr. Altmeyer: They rely upon the health insurance approach. The outstanding exception is Russia, which has a system of state medicine, and salaried physicians.

Senator Aiken: This bill, as I understand it, simply sets forth that money must be provided, and it does not provide the means of getting that money, does it? Mr. Altmeyer: It does not provide the means of getting that money, no.

Senator Aiken: That would have to be provided by different committees than this one? Mr. Altmeyer: That is right.

Senator Aiken: And probably would originate in the House if it was in the nature of a special tax or assessment? Mr. Altmeyer: That is right.

Senator Donnell: Mr. Altmeyer, has it not been planned that the financing of this S. 1606 would be along the lines contemplated by S. 1050, the other Wagner-Murray-Dingell Bill? Mr. Altmeyer: I think so. Of course, it is conceivable that you might finance it through an earmarked income tax instead of a payroll tax.

Senator Ellender: Mr. Altmeyer, have you or any of your staff made any study of these countries that you have just referred to as to this involuntary method? Mr. Altmeyer: Yes.

Senator Ellender: What has been the tendency there with respect to physicians being put on a salary basis? Has it increased from the time the laws in the respective countries became effective or just what is the situation there in that respect? Mr. Altmeyer: No, I do not think that there has been any definite tendency that way. As you know, right now in Britain there is a proposal before the Parliament to extend very much the coverage and benefits provided under their health insurance system and to turn it into a health service plan, covering the entire population, and under that plan it is proposed that the doctors be paid a part-salary, a part basic salary and a per capita fee in addition. That is proposed and it is not in effect at the present time. And the British Medical Association is opposed to that change, and I do not know what the outcome will be.

Senator Ellender: I can imagine what is going to happen. Mr. Altmeyer: I might say that in some countries the doctors themselves have preferred to be paid on a salary basis and give part of their time to clinics, a certain number of hours a day or week. In South America and Mexico that is the typical way of the doctors' rendering service. They are private practitioners but they come into a clinic for a certain part of their time and are paid accordingly.

Senator Ellender: Under the terms of the bill as I understand it, doctors may elect to give their services for a regular monthly or yearly stipend. Mr. Altmeyer: Yes, sir.

Senator Ellender: Well, what would be the method of carrying that out? Let us assume that a community where you have fifty doctors five of them elect to give their services on a monthly basis and the rest do not. Mr. Altmeyer: There would have to be a division of the amount, the total amount of money allotted to that community on the basis of the doctors who elected to accept their remuneration in one form, and the doctors who elected to receive it in another form, and it would have to be on the basis of the case load, so to speak, of the patients served.

Senator Ellender: Well, would the fees be so limited, I mean limited in the same manner? Mr. Altmeyer: Are you talking about the salaried doctor? Senator Ellender: In other words, as I understand it, the salary would be based on the amount that that community would receive. Mr. Altmeyer: Well, I thought that you posed the question if some doctors in that community elected to get their money one way and other doctors another way. Senator Ellender: I did not intend to go into that field of it, but I am wondering how it would be operated as between those doctors that elect to receive monthly services or monthly pay for their services, and the others who wanted to join the organization, who elect to do theirs on a fee basis.

Mr. Altmeyer: There would first have to be a determination of the reasonable cost of the services to be rendered the people in that community. Then there would have to be discussion with the local practitioners of the reasonable division between the doctors who want to be paid on this basis. Senator Ellender: In other words, the money would be divided up, shall we put it that way, as among those who choose to do the work on a fee basis, and those on a salary basis. Now, how often would that have to be done, that allocation? Mr. Altmeyer: Well, you would reach a basic agreement that I would think would extend at least for a year, and in the light of the experience that might very well be adjusted from time to time. It might be a continuing agreement subject to adjustment. Senator Ellender: So that if in a year the amount of money that is allocated to a community would be less in one year than the other, those doctors receiving fees and those receiving salaries would be reduced accordingly, is that right, if there would be a reduction? Mr. Altmeyer: If there would be a reduction, but I do not know why there would be a reduction.

Senator Ellender: I do not know. And you might have an epidemic in some community. How would you take care of those situations? Mr. Altmeyer: Then you would want to provide, if you had anything like that, you would want to have a free fund to put into that community. Senator Ellender: All of those contingencies can be met by that? Mr. Altmeyer: I would envisage an allocation by states, with a small free fund so that in case of epidemic or unusual circumstances in a state you could make some funds available as between the states, and then from that state level you would have to break it down into communities. Senator Ellender: I did not mean to go into the allocation part, but since you have raised the question, is that allocation made in proportion to what—the population or the money collected, or the need, or just what? Mr. Altmeyer: It is not spelled out in the bill at all. It is not spelled out. I think the fundamental criterion ought to be the need.

Senator Aiken: I am asking rather elementary questions, but what would the effect of this bill be on those people who have no earning power whatsoever, who are now served when they are sick, if they are sick at all, or treated by government doctors, and I mean doctors hired by the local government? That is some hired by the year, and some hired in industry, I suppose that you would call it by piecework or by the visit. They would be receiving medical care under the terms of this bill and thereby relieve the local community of the expense, which is now considerable. Mr. Altmeyer: That is provided in this bill under title I, part C, whereby a community may pay a premium into this insurance system if it elects or it can furnish the service direct, and then that community would receive a grant in aid from the federal government on a variable grant basis—the poorer the state the greater the amount of the federal grant—to help it pay its premium or to pay for the service if it rendered the service directly through salaried doctors or some other arrangement.

Senator Aiken: Then the community or the county or state would pay this premium in lieu of a pay roll tax which the earning patient would naturally pay? Mr. Altmeyer: Yes, sir.

Senator Ellender: To pursue the question of allocation that I was talking about before the Senator from Vermont asked you a question, do you not think it would be advisable for the committee to spell out into the bill the yardstick by which these funds should be allocated with respect to states? Mr. Altmeyer: I think it would be very fine.

Senator Ellender: And your view is that emphasis should be put on need. Mr. Altmeyer: Yes, sir.

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(Senator Donnell and Mr. Altmeyer discussed section 215 of the bill, covering ways in which a person can become eligible under the general provisions.)

Senator Donnell: Has any estimate been made as to how many individuals in the United States would be currently insured under the terms of this bill? Mr. Altmeyer: Yes, it is estimated that between 105 and 112 million persons counting their dependents.

Senator Donnell: Has there been any estimate made as to the total annual expense of providing the personal health service benefits under this bill for these 105 to 112 million persons? Mr. Altmeyer: Yes, sir.

Senator Donnell: What is the estimate of that? Mr. Altmeyer: The estimate is $3,000,000,000, which would work out—

Senator Donnell: That is per year? Mr. Altmeyer: Yes, sir, which would work out about 3.5 per cent of payrolls. That is the total overall cost, including these payments on behalf of the dependent persons. What I wanted to say was that 3.5 per cent payrolls includes the special premiums paid on behalf of the dependents and these persons under old age and survivors insurance, and some special payments that would be made out of the treasury for dental and home nursing care, so that the net payroll tax would be 3 per cent and not 3.5 per cent. Half of that would be met by general revenues, either federal, state or local, or these special classes of persons and services that I mentioned.

Senator Donnell: I am not quite clear on that. Do you mean it is contemplated that there shall be an employers' and an employees' tax on payrolls? Mr. Altmeyer: This bill, of course, is entirely silent.

Senator Donnell: I understand that in S. 1050, it is contemplated that there shall be employers' payroll tax and employees' payroll tax? Mr. Altmeyer: Yes, sir.

Senator Donnell: In what percentage? Mr. Altmeyer: One and a half per cent each.

Senator Donnell: Now suppose, or has it been estimated, Mr. Altmeyer, whether or not that aggregate of 1.5 per cent from the employers and 1.5 per cent from the employees will meet this annual expenditure of $3,000,000,000? Mr. Altmeyer: Yes, sir, it will.

Senator Donnell: It will do that? Mr. Altmeeyr: Plus the half a billion dollars of general revenues. That would raise only about perhaps two and a half billion dollars through payrolls.

Senator Donnell: Two and a half billion through payrolls, so that there would have to be $500,000,000 per year raised from governmental sources, from one place or the other, is that right? Mr. Altmeyer: Yes, sir.

Senator Donnell: Now, I understood you to say earlier that there are two possible plans of financing this matter, either the plan under S. 1050, which I understand is the payroll tax from employer or employee, or an earmarked income tax, is that right? Mr. Altmeyer: Yes, sir.

Senator Donnell: Would that earmarked income tax be paid by every income tax payer or would it be confined solely to the persons who derive these benefits, this 105 to 112 million persons? Mr. Altmeyer: It would be paid by everybody, probably subject to a minimum exemption, and all those people then automatically acquire eligibility through their income tax payments.

Senator Donnell: Has there been given consideration as to which of these two financing plans is preferable, namely the one under S. 1050, the payroll tax from employer and employee, supplemented by governmental payment, or on the other hand, the earmarked income tax? Mr. Altmeyer: Yes, sir, there has been a lot of consideration given to that, and over in the House Ways and Means Committee at the present time, for example, there are hearings going on to extend the federal old age and survivors insurance system. As you know, it covers about 20 million persons not covered at the present time, and there is discussion going on as to ways and means of covering it. My testimony over there was to the effect that the employed persons who work for others, the simplest way is to collect as a payroll tax. For the self-employed persons not on anybody's payroll, what amounts to an earmarked income tax would be the best way to collect it.

Senator Donnell: Do you favor a combination of the two plans, a payroll tax and an earmarked income tax? Mr. Altmeyer: Yes, sir, I think that that would be the most practical way to start, because we have, as you know, already set up in Baltimore records covering about 80 or 83 million individuals, and we have all of the methods worked out for reporting by employers, and those reports can be used over in Baltimore and could be used as a basis for determining eligibility under this health insurance bill that is proposed, without any additional expense.

Senator Donnell: So, as I understand, you would favor imposing both a payroll tax on the employers and employees and an earmarked income tax? Mr. Altmeyer: For those you could not reach through the payroll tax.

Senator Donnell: I see. Has there been any document or publication that has been prepared for study by the members of Congress as to the relative merits of the two plans of financing, Mr. Altmeyer? Mr. Altmeyer: We are just finishing up a report at the request of the chairman which will touch on that feature.

Senator Aiken: As I understand it, if a patient that is insured under this plan is in a hospital and desires better facilities and better care than would ordinarily be furnished under the plan of insurance, he can get those better facilities and care by paying additional charge for the hospital, is that correct? Mr. Altmeyer: That is correct.

Senator Aiken: Now, suppose that an insured person sends for the doctor, and ordinarily so many visits a day would be required, but he likes the doctor's company pretty well and he wants him to come more, then for those additional visits the doctor can charge whatever he sees fit? Mr. Altmeyer: No, I mean the doctor would have to decide what visits are reasonable and refuse to come just to hold his hand.

Senator Aiken: Or tell him some new stories. We all know that a doctor's stories and conversation probably has more effect on more patients than medicine. Mr. Altmeyer: If the doctor felt that it would be reasonable for him to call.

Senator Aiken: If the patient wants a certain doctor and is willing to pay him more than the fee allowed by this, can he do so? Mr. Altmeyer: No.

Senator Aiken: Not if he has to come under the plan? Mr. Altmeyer: If the doctor elects to come under this, he cannot charge an extra amount to the patient.

Senator Aiken: But he could have him come an unnecessary number of visits if he wanted to pay the entire cost of those visits himself? Mr. Altmeyer: You mean if the doctor had elected a fee for service, I do not think so, because the doctor would have to agree to submit all his bills to the insurance institution, because that is a very important feature of any insurance system, that it does provide certain protection; and if it does not provide certain protection, why then everybody is up in the air as to just how much he will have to pay if he gets sick.

Senator Aiken: He can pay for better hospital services? Mr. Altmeyer: Yes, because that is an objective thing that can be readily determined. He is guaranteed certain minimum hospital service, and if he wants luxury service, that is something very clear.

Senator Aiken: If the insurance guarantees him $7 a day, and he wants a room that costs $10 a day, he can take that other room and pay the $3 additional out of his own pocket? Mr. Altmeyer: Yes, sir.

Senator Ellender: As I understand it, Mr. Altmeyer, it is left entirely to the physician to determine whether or not an extra visit is necessary? Mr. Altmeyer: That is right.

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Senator Aiken: Could a physician or surgeon participate in this plan five days a week and reserve the rest of the week for his wealthy clientele? Mr. Altmeyer: Yes, sir, he could.

Senator Murray: So that under those circumstances he could really increase his earnings? Mr. Altmeyer: Well, our cost estimates include higher remuneration for physicians than they have ever earned in peacetime, so that even if he did not elect to serve patients outside of the system he would, under this, earn more than he had been in the habit of earning.

Senator Aiken: In those circumstances, with more people getting medical care, many more people getting medical care, he would not have time to put in his additional visits which he might otherwise give to a wealthy patient. Mr. Altmeyer: He could limit himself, of course.

Senator Aiken: Are there doctors enough in the country to meet the needs provided everybody had medical care? Mr. Altmeyer: If they are properly distributed, there are just about enough doctors to meet the need. The trouble is that they are not properly distributed.

Senator Aiken: There must be some doctors then that are not making a living, because we know that they are not properly distributed. Mr. Altmeyer: There are many doctors that are not making a decent living today.

Senator Murray: Under this bill then, if it was put in operation, the income of the medical profession as a whole would be greatly increased? Mr. Altmeyer: Yes, sir.

Senator Murray: That is because those who are now giving services are not being paid for them and would be able to collect? Mr. Altmeyer: There are two reasons. About one quarter to one third of the bills are not paid, and the other reason is that a great proportion of the doctors are not fully occupied, and under this bill they would be guaranteed payment and they would be fully occupied.

Senator Donnell: How large an organization is the American Medical Association? Mr. Altmeyer: I think about 100,000 members.

(Actually over 125,000.—Ed.)

Senator Donnell: Composed of physicians and surgeons? Mr. Altmeyer: Yes, sir.

Senator Donnell: Do you know what proportion that is of the physicians and surgeons? Mr. Altmeyer: I think there are about 170,000 doctors licensed, and about 150,000 are active practitioners.

(Actually over 190,000 licensed.—Ed.)

Senator Donnell: I would like to know whether substantially all of the members of the American Medical Association are active practitioners? Mr. Altmeyer: I imagine all of them, about 100,000 as I recall.

(Many members are not active practitioners.—Ed.)

Senator Donnell: So that there is somewhere in the neighborhood of 60 per cent of the actual active practitioners who are members of the American Medical Association? Mr. Altmeyer: Yes, sir.

(Nearer 75 per cent.—Ed.)

Senator Donnell: Now, Doctor, if this bill is going to prove of financial benefit to the practitioners, what is the basis, if you know, of the American Medical Association's opposition to compulsory health insurance? Mr. Altmeyer: I would rather that they speak for themselves, Senator.

Senator Aiken: You said maybe 110 million people would be insured under this plan. What groups comprise the other 130 million people? Mr. Altmeyer: People not attached to payrolls. I have a breakdown here.

Senator Aiken: You mean people living on fixed incomes, living on an annuity? Mr. Altmeyer: There are about 15 to 20 million people not covered, even though this bill was amended to cover certain other groups that I mention later, and those consist of the following classes of persons: marginal workers, unpaid family workers and persons newly entering the labor market who just miss qualifying automatically; secondly, persons aged 18 and still in school, and, third, persons in institutions, of course, and for disabled individuals and their wives and children; and next, widows not eligible under this Federal Old Age and Survivors Insurance System and, next, the aged persons who may be receiving old age pensions.

Senator Aiken: How would they be cared for? Mr. Altmeyer: You remember I said that they could be brought into the system by the state paying in a premium on their behalf.

Senator Aiken: What about 15 or 20 million ex-servicemen and women that have the facilities of the veterans' hospitals at their command? Mr. Altmeyer: Well, there is no distinction made here; those who are in gainful employment would be covered, but they would be covered for everything. As you know, the veterans' benefits apply to service connected disability and non-service if there is room and if the person can establish need, but their dependents are not taken care of under veterans' legislation.

Senator Donnell: Is there any national organization of practicing physicians or surgeons which has expressed itself in favor of compulsory health insurance? Mr. Altmeyer: Yes, sir, there are several.

Senator Donnell: Would you mind telling us which those are, if you recall? Mr. Altmeyer: There is one called the Physicians' Forum, and the other one is the Committee for Improvement of Medical Care; I think that they have asked to testify.

Senator Donnell: Are those the only two that you know of that have so expressed themselves, of the national organizations? Mr. Altmeyer: That is all that I know of.

Senator Donnell: I appreciate that they can testify themselves, but I am asking you if you know as a fact approximately the membership of the Physicians' Forum? Mr. Altmeyer: It is very small compared with the American Medical Association.

Senator Donnell: Do you know about what it is? Mr. Altmeyer: No, I do not know, maybe 2,000.

Senator Donnell: And this committee, what is the name of that? Mr. Altmeyer: The Committee for the Improvement of Medical Care.

Senator Donnell: How large an organization is that? Mr. Altmeyer: That is still smaller.

Senator Donnell: Do you know what the actual membership is? Mr. Altmeyer: I do not know.

Senator Donnell: Smaller than the Physicians' Forum? Mr. Altmeyer: Yes, sir.

Senator Donnell: Those are the only two organizations of physicians that you know of that favor the compulsory health insurance? Mr. Altmeyer: That is right.

Senator Aiken: However, there are 50,000 or more that do not belong to any organizations? Mr. Altmeyer: Yes.

Senator Aiken: Are they peculiar to any particular region of the country? Mr. Altmeyer: No, I think that they are scattered.

SENATOR AIKEN: We have always been told that the American Medical Association was a closed shop arrangement, and when you say 50,000 doctors in the country do not belong, you naturally question the report that we have always had that the American Medical Association ruled every doctor, old and young, with an iron hand. But if there are 50,000 that do not belong, that makes me feel like asking more questions. I am wondering if we do have such a closed union as they are reported to have had.

SENATOR DONNELL: Are there any medical or surgical journals that you know of that have expressed themselves favorably to compulsory health insurance in this country? MR. ALTMEYER: Not that I know of.

SENATOR DONNELL: Have a number of them expressed themselves in opposition to it? MR. ALTMEYER: I think they have. There may be some that say a kind word.

SENATOR DONNELL: Do you mind telling us, Mr. Altmeyer, who is the actual author of S. 1606, I mean to say who actually prepared it, if you know? MR. ALTMEYER: I think it is a product of many minds that were put to work at the request of the authors of the bill.

SENATOR DONNELL: Was Mr. Isadore Falk one of the gentlemen who participated in it? MR. ALTMEYER: Yes, sir, he is director of our bureau of research and statistics.

SENATOR DONNELL: Did he do the bulk of the work in the preparation of S. 1606? MR. ALTMEYER: I would not say he did the bulk of the work; he did a major or considerable part of it in cooperation with the U. S. Public Health Service.

SENATOR MURRAY: Mr. Altmeyer, it has been a matter of evolution, has it not? It has been going on for a number of years. The bill was introduced by Senator Wagner some years back and hearings were held on that, and as a result of those hearings, additional ideas were developed and new provisions were suggested, and the thing has been growing over a period of years. MR. ALTMEYER: Yes, sir, I have myself participated actively since 1933 in the development of a national health plan, and as the Senator points out, in 1938 there was a national health bill introduced, and over the course of the years there have been many people consulted in the development of a national health plan, including the representatives of the American Medical Association.

SENATOR MURRAY: And suggestions have been made by members of the medical profession, letters have been sent in. I have had a great many letters from doctors in various parts of the country in which they suggest different provisions and proposals in connection with the national health program, and is it not true that in nearly every community in the country there are some medical men who, even though they belong to the American Medical Association, feel there is a great need for an insurance system of this kind? MR. ALTMEYER: Yes, sir. I feel that if the medical practitioners of this country could sit around this table as we are sitting around it today, we would get a majority vote in favor of this bill.

SENATOR MURRAY: At the commencement of the discussion of the proposed health legislation the medical profession took a decided position against it and did not attempt to assist in working out a program but merely abused it and criticized it and took no part in it, and they organized a program of carrying on propaganda against it, is that not true? MR. ALTMEYER: I am afraid it is.

SENATOR DONNELL: Has there been any poll taken among the practitioners as to how they feel on the subject of compulsory health insurance, Mr. Altmeyer? MR. ALTMEYER: Yes, I think that there was one taken. I do not recall when and what it showed.

SENATOR DONNELL: Do you remember who took it? MR. ALTMEYER: I do not remember that, I just have a vague recollection that there was a poll taken, and I do not remember whether the question was formulated so that you got a clearcut reaction or not. It makes a great deal of difference if you put in some double words in the question, you are sure to get an unfavorable response.

SENATOR DONNELL: In reference to Mr. Falk, he is not a physician, is he? MR. ALTMEYER: No, sir, he is a biologist and an economist.

SENATOR DONNELL: I think he holds a doctor's degree, doctor of philosophy, but he is not a physician. MR. ALTMEYER: No, sir.

SENATOR DONNELL: Or surgeon? MR. ALTMEYER: That is right, and neither am I.

SENATOR DONNELL: I See.

(At the request of Senator Donnell, Mr. Altmeyer listed his qualifications.)

SENATOR AIKEN: Perhaps we should not bring up so many matters here, but it is sure to come up sooner or later, and what would you do, Mr. Altmeyer, about the conscientious objector who does not believe in the use of medicine but would be required to pay his share of the costs? MR. ALTMEYER: That is a policy question, and I think that this committee would have to decide. It is not an economic question, and it is not a professional question. It is a matter of erroneous conviction. We had the same problem under state workmen's compensation laws. Some religious sects felt that they should not carry workmen's compensation, but, so far as I know, the state laws required them to carry workmen's compensation insurance for the protection of their workers. But that question is of high policy.

(Senator Donnell asked for literature on compulsory sickness insurance in other countries.)

SENATOR DONNELL: I do not want to leave the implication by the question that I think the American Medical Association should be influenced, either primarily or solely, by their own financial position either under or outside of the compulsory health insurance. I thought, however, that the point that the chairman had suggested, that the doctors would really receive larger financial returns under the compulsory insurance, that it would be of interest to know, which I have no doubt we will later learn from them, what is their basis of opposition to this proposed insurance.

SENATOR MURRAY: I am sure that we will have that during the course of the hearings, and I suppose that we will have representatives of the American Medical Association here, and they have already indicated their intention to be here, and the representatives from several of the state organizations will be here. MR. ALTMEYER: I would like to say this as a nonmedical man, that I would not accuse or even think that the opposition of the American Medical Association is wholly economic. I think a large part of it is actuated by a genuine concern as to the effect on medical practice. I think they are alarmed, but nevertheless I would not want to go further into that.

SENATOR MURRAY: It is the experience that all institutions are adverse to any radical departure from the usual practice. Innovations have to come only after long periods of agitation and discussion, and there has been considerable change in the minds of physicians in this country as a result of the discussions that have taken place here during the past few years in connection with this problem. We have received letters from them indicating their changed ideas. MR. ALTMEYER: If you are interested in the historical attitude of the American Medical Association, according to my recollection back in 1916, when I was studying the insurance movement in this country, which started way back there, a committee of the American Medical Association studying the subject issued a statement in favor of compulsory health insurance. It was repudiated later by the House of Delegates, I believe, of the American Medical Association.

In 1932 there was a report on the cost of medical care being given under the chairmanship of Ray Lyman Wilbur, who was Secretary of the Interior in the Hoover administration, and the majority report came out in favor of a plan for financing the cost of medical care either through taxation or through health insurance. The minority, which was composed, as I recall, rather largely of representatives of the American Medical Association, opposed the majority report but said that if they had to choose between voluntary health insurance and compulsory health insurance they would choose compulsory health insurance based on the experience of the two types of insurance abroad. SENATOR DONNELL: That was the minority of the committee? MR. ALTMEYER: Composed largely of the representatives of the American Medical Association, in 1932, said that if they had to choose between voluntary health insurance and compulsory health insurance they would choose compulsory health insurance as the lesser of the two evils.

SENATOR DONNELL: The House of Delegates of the American Medical Association is the governing body of that Association, is it not? MR. ALTMEYER: Yes, sir.

SENATOR DONNELL: And at no time has the American Medical Association, through its House of Delegates, expressed approval of compulsory health insurance? MR. ALTMEYER: No, sir.

SENATOR MURRAY: But the organization itself in its convention did adopt a resolution favoring compulsory health insurance at one time? MR. ALTMEYER: It was this committee of the American Medical Association that issued the statement that I have in mind, back in 1914 or 1916.

SENATOR MURRAY: What committee is that? MR. ALTMEYER: I cannot furnish the exact title. It escapes my memory.

SENATOR DONNELL: That committee report was not adopted by the Association, is that correct? MR. ALTMEYER: That is right. SENATOR DONNELL: In fact, the Association took the view contrary to that recommendation? MR. ALTMEYER: That is my recollection. Whether they formally repudiated it I do not recall

MR. ALTMEYER: The greatest value of voluntary health insurance has been the experience gained in learning how to operate compulsory prepayment plans. By a study of the accomplishments of voluntary insurance and the difficulties it has encountered, a program can be worked out which can succeed where voluntary plans have failed.

The principal reason why voluntary programs have not succeeded and cannot succeed is economic. Unless adequate funds are available, no program can adequately extend either its membership or the scope of its services

A comprehensive health insurance program must rest on a method of financing which makes it possible for the family to budget the costs without having to deny itself the essentials of everyday living. The costs must also be distributed among a membership that is large enough to keep the premium low and in accordance with ability to pay. To accomplish these ends, compulsory insurance is necessary.

Compulsion is not a word that is accepted lightly by the American people, and the opponents of compulsory health insurance have made much of this natural antipathy.

The American Medical Association and other organizations favoring the present inadequate voluntary plans or sponsoring new voluntary insurance programs have implied that a compulsory system of health insurance would result in regimentation and a form of totalitarianism which is not in keeping with the principles expressed in our Constitution and in the Bill of Rights However, it might be pointed out that voluntary insurance, as advocated by the American Medical Association, is anything but democratic. The American Medical Association recommends a series of voluntary plans, to be run by the medical societies. No mention is made of other associations or of public participation in the organization of these plans, in the control of the funds which the public will have to pay, in the formulation of the standards the plans will observe or in their administration. The Association violates the first principle of democracy—the right of the public to participate—to say nothing of the right of the public to control public enterprise essential to the welfare of the public.

In contrast, under compulsory health insurance, financing and administration would be determined by representatives of the public—using the advice and the skills of professional groups on professional matters That may be why the public attitude toward health insurance as a part of a system of social insurance is so favorable, as evidenced by many polls of public opinion. The Gallup poll of 1943 showed 59 per cent of the persons canvassed in favor of a compulsory health insurance plan. A public poll taken a few months ago for and at the expense of the National Physicians' Committee, the spearhead organization attacking the bill we are discussing, showed that 64 per cent of the people prefer a prepayment method for meeting medical costs and that 55 per cent think a federal plan would be a "good thing for the nation as a whole"

SENATOR DONNELL: Is the federal plan to which you refer in that sentence a compulsory plan? MR. ALTMEYER: I am just taking the words of the poll. That is what they use. They used the expression "federal plan."

SENATOR DONNELL: Did the poll mention "compulsory insurance"? I should say, did the question submitted in the poll specifically mention "compulsory health insurance"? MR ALTMEYER: I have it here some place: "Do you think the federal government plan would be a good thing or a bad thing for the nation as a whole"? Fifty-five per cent said a "good thing," 24 per cent said a "bad thing," 8 per cent qualified their answers and 15 per cent had no opinion

SENATOR DONNELL: Do you know how wide the participation was in that poll? MR ALTMEYER: No, I don't know. It was conducted by a public relations organization at the request of this National Physicians' Committee, which is opposing this bill.

SENATOR DONNELL: So the wording "compulsory health insurance" does not appear in this proposition; but your thought is, I take it, by common knowledge the expression "federal plan" would be generally understood to apply to it. MR. ALTMEYER: On all the other questions they posed that as contrasted with a doctor organization plan

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(There was discussion of various polls and also of federal expenditures for health. Mr. Altmeyer analyzed the administrative features.)

(To be continued)

Coming Medical Meetings

American Association for Thoracic Surgery, Detroit, May 29-31. Dr. Richard H. Meade Jr., Kennedy General Hospital, Memphis 15, Tenn., Secretary.

American Association of Plastic Surgeons, Toronto, Canada, June 3-4. Dr. Frederick A. Figi, 102 Second Ave., S.W., Rochester, Minn., Secretary.

American Association of the History of Medicine, Atlantic City, May 26-27. Mr. W. B. McDaniel II, 19 S. 22d St, Philadelphia 3, Secretary.

American Broncho Esophagological Association, Chicago, May 31. Dr. Paul H. Holinger, 700 N. Michigan Ave, Chicago 11, Secretary.

American College of Physicians, Philadelphia, May 13-17. Mr. E. R. Loveland, 4200 Pine St, Philadelphia 4, Executive Secretary.

American Dermatological Association, Hot Springs, Va, June 10-14. Dr Harry R. Foerster, 208 E Wisconsin Ave, Milwaukee, Secretary.

American Federation for Clinical Research, Atlantic City, May 28. Dr. Richard H. Lyons, University Hospital, Ann Arbor, Mich, Secretary.

American Gastro Enterological Association, Atlantic City, May 24-25. Dr. J. Arnold Bargen, 102 Second Ave., S. W., Rochester, Minn., Secretary.

American Laryngological Association, Chicago, May 29-30. Dr. Arthur W. Proetz, 3720 Washington Blvd, St. Louis 8, Secretary.

American Laryngological, Rhinological and Otological Society, Chicago, May 27-28. Dr. C. Stewart Nash, 277 Alexander St., Rochester 7, New York, Secretary.

American Otological Society, Chicago, May 31-June 1. Dr. Gordon D. Hoople, 713 E Genesee St, Syracuse, N. Y., Secretary.

American Pediatric Society, Skytop, Pa., May 1-3. Dr. Hugh McCulloch, 325 N. Euclid Ave, St. Louis 8, Secretary.

American Psychiatric Association, Chicago, May 27-30 Dr. Winfred Overholser, St Elizabeth's Hospital, Washington 20, D. C., Secretary.

American Society for Clinical Investigation, Atlantic City, May 27, Dr. Eugene A. Stead Jr., Grady Hospital, Atlanta 3, Ga, Secretary.

American Society for Research in Psychosomatic Problems, New York, May 11-12. Dr. Edwin G. Zabriskie, 714 Madison Ave, New York 21, Secretary.

American Therapeutic Society, Atlantic City, May 11-12 Dr. Oscar B. Hunter, 1835 I St., N.W., Washington, D. C, Secretary.

Arizona State Medical Association, Phoenix, May 2-3. Dr. Frank J. Milloy, 112 N. Central Ave., Phoenix, Secretary.

Association of American Physicians, Atlantic City, May 28-29. Dr. Joseph T. Wearn, 2065 Adelbert Road, Cleveland 6, Secretary.

California Medical Association, Los Angeles, May 7-10. Dr. George H. Kress, 450 Sutter St., San Francisco 8, Secretary.

Central States Dermatological Society, Detroit, April 27. Dr. Clarence E Reyner, Henry Ford Hospital, Detroit, Secretary.

Connecticut State Medical Society, Hartford, May 1-3. Dr. Creighton Barker, 258 Church St., New Haven 10, Secretary.

Florida Medical Association, Jacksonville, April 22-24. Dr. Robert B. McIver, P. O. Box 1018, Jacksonville, Secretary.

Georgia, Medical Association of, Macon, May 7-10. Dr. Edgar D. Shanks, 478 Peachtree St, N.E, Atlanta, Secretary.

Illinois State Medical Society, Chicago, May 14-16. Dr. Harold M. Camp, 224 S. Main St, Monmouth, Secretary.

Kansas Medical Society, Wichita, April 22-25. Dr. F. R. Croson, 112 W. Sixth St, Topeka, Secretary.

Louisiana State Medical Society, Alexandria, May 6-8. Dr. P. T. Talbot, 1430 Tulane Ave, New Orleans 13, Secretary.

Maryland, Medical and Chirurgical Faculty of, Baltimore, April 23-24. Dr. W. Houston Toulson, 1211 Cathedral St., Baltimore 29, Secretary.

Massachusetts Medical Society, Boston, May 21-23. Dr. Michael A. Tighe, 8 Fenway, Boston, Secretary.

Minnesota State Medical Association, St. Paul, May 20-22. Dr. B. B. Souster, Lowry Medical Arts Bldg., St. Paul 2, Secretary.

Mississippi State Medical Association, Jackson, May 14-15. Dr. T. M. Dye, Box 295, Clarksdale, Secretary.

National Tuberculosis Association, Buffalo, N. Y, June 11-13. Dr. Charles J. Hatfield, 1790 Broadway, New York 19, Secretary.

Nebraska State Medical Association, Lincoln, May 6-9. Dr. R. B. Adams, 416 Federal Securities Bldg, Lincoln 8, Secretary.

New Hampshire Medical Society, Manchester, May 14. Dr. C. R. Metcalf, 5 S. State St, Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, May 21-23. Dr. Alfred Stahl, 55 Lincoln Park, Newark, Secretary.

New York, Medical Society of the State of, New York, April 29-May 3. Dr. Walter P. Anderton, 292 Madison Ave, New York 17, Secretary.

North Carolina, Medical Society of the State of, Pinehurst, May 1-3. Dr. Roscoe D. McMillan, P. O. Box 232, Red Springs, Secretary.

North Dakota State Medical Association, Bismarck, May 26-28. Dr. L. W. Larson, 221 Fifth St, Bismarck, Secretary.

Ohio State Medical Association, Columbus, May 7-9. Mr. Charles S. Nelson, 79 E. State St, Columbus, Executive Secretary.

Rhode Island Medical Society, Providence, May 15-16 Dr. William P. Buffum, 122 Waterman St, Providence 6, Secretary.

Society of American Bacteriologists, Detroit, May 21-24. Dr. Leland W. Parr, 1335 H St, N. W., Washington 5, D. C, Secretary.

South Carolina Medical Association, Myrtle Beach, April 30-May 2. Dr. Julian P. Price, 105 W. Cheves St, Florence, Secretary.

South Dakota State Medical Association, Aberdeen, June 1-4. Dr. Roland G. Mayer, 22½ S Main St, Aberdeen, Secretary.

Texas, State Medical Association of, Galveston, May 6-9. Dr. Holman Taylor, 1404 W. El Paso St., Fort Worth 3, Secretary.

West Virginia Medical Association, Huntington, May 13-15. Mr. Charles Lively, P. O. Box 1031, Charleston 24, Executive Secretary.

Medical Legislation

STATE LEGISLATION

Mississippi

Bills Introduced.—H. C. R. 38 proposes a resolution to the effect that the members of the house of Mississippi be urged to take aggressive action toward securing the passage of the federal hospital construction bill, S. 191, in order to supplement the state hospital construction program.

Bills Passed.—H. 699 passed the senate April 5. It proposes to authorize the state board of examiners to proceed by injunction to prohibit any person from practicing any profession licensed under the supervision of said board when such person is not duly licensed so to practice, except persons practicing chiropractic, osteopathic or veterinary sciences.

Bills Enacted.—H. 72 was approved April 10. It provides for the creation of a four year medical school as a department of the University of Mississippi which shall be operated as a class A medical school in accordance with the "Council of Medical Education" of the American Medical Association. H. 430 was approved April 4. It provides for the creation of a Mississippi Commission on Hospital Care to set up and administer a statewide plan for the construction, equipping and maintenance of hospitals, nurses' homes, health centers, clinics and related facilities and in conjunction therewith to prepare a statewide hospital plan and to conduct all necessary studies and surveys incident to developing such a statewide hospital plan. H. 431 was approved April 9. It provides for the creation of a state medical education board to receive and pass on applications for loans or scholarships made by students who are residents of the state and who desire to become physicians. The purpose of such loans is to enable the applicants to obtain a standard four year medical education which will qualify them to become licensed, practicing physicians and surgeons in the state. H. 432 was approved April 10. It provides an appropriation to the state medical education board to provide loans or scholarships for citizens of the state who desire a medical education which will qualify them to become licensed and practicing physicians and surgeons within the state. H. 712 was approved April 10. It provides for the incorporation of medical, surgical and other corporations organized for improving the physical, mental and moral condition of mankind. H. 893 was approved April 9. It amends the law relating to ad valorem taxes by exempting from such tax all plants manufacturing, processing or preparing dentifrices, medicines, drugs or pharmaceuticals. H. 994 was approved March 30. It provides an appropriation to be used and expended by the state board of health and the state department of education in cooperation with the International Health Division of the Rockefeller Foundation and the General Education Board, respectively, in carrying out a program of coordinated school, health and nutrition services.

Missouri

Bills Enacted.—S. 432 was approved April 6. It provides for the creation of a state board of chiropody and the assumption by such board of the powers and duties heretofore vested in the state board of health. S. 433 was approved April 6. It provides for the transfer to the state board of chiropody of certain powers relating to licensure and registration of practitioners heretofore vested in the state board of health.

New Jersey

Bills Introduced.—A. 303, to amend the law relating to grounds for divorce, proposes to authorize a divorce for insanity when it shall appear to the satisfaction of the court, from the testimony of at least two reputable physicians, that the insanity is incurable. A. 308 proposes the enactment of a cash sickness compensation law to furnish compensation to employees who are unemployed because of sickness. S. 298, relating to the practice of dentistry, proposes to admit to examination in New Jersey applicants licensed in another state who spent a period of at least one year as a commissioned officer in the Army or Navy and practiced dentistry in the performance of his duties, who was a resident of New Jersey at the time he entered the armed forces, who applied for the examination within six months after termination of his services, or within six months after the passage of the act, and who meets certain other qualifications concerning professional and preprofessional educational standards.

Bill Passed.—S. 120 passed the house April 8. It proposes the establishment of a diagnostic center to be fully equipped with all modern scientific equipment and provided with a staff of competent specialists in the field of medicine, psychiatry and psychology, to the end that full and complete diagnostic services shall be available to any governmental agency desiring to secure a complete diagnosis of any individual having need for such services.

Bill Enacted.—A. 147 has become chapter 51 of the Laws of 1946. It provides that the holder of a license to practice a profession, the license or registration certificate of which was forfeited or lapsed because of the passage of time while the holder thereof was in the armed forces, shall be entitled, without examination or reexamination, within six months after his discharge, to a renewal or reinstatement of such license on payment of the lawful fee.

New York

Bills Enacted.—A. 1493 has become chapter 348 of the Laws of 1946. It amends the social welfare law by providing that physicians who are public officers or employees may render certain emergency medical services until July 1947. A. 1974 has become chapter 527 of the Laws of 1946. It amends the state licensing law by postponing from July 1946 to July 1947 time during which previous licentiates whose licenses lapsed during military service may have a renewal license without examination. A. 2083 has become chapter 406 of the Laws of 1946. It extends the life of a temporary state commission previously appointed to formulate a long-range health program from March 1946 to March 1947. S. 1000 has become chapter 519 of the Laws of 1946. It amends the law relating to privileged communications by providing for the waiver of such privilege by any party in interest in any litigation wherein the interests of the personal representative of the deceased patient are deemed by the trial judge to be adverse to those of the estate. S. 1189 has become chapter 423 of the Laws of 1946. It amends the law relating to live pathogenic micro-organisms or viruses by providing that persons cultivating or possessing such substances must satisfy the commissioner of health that such organisms or viruses will not become a menace to the public health and must register with the commissioner of health. The registration must be renewed each year. S. 1354 has become chapter 548 of the Laws of 1946. It amends the law relating to nonprofit medical and hospital service corporations by authorizing the creation of dental expense indemnity service plans. Dental expense indemnity will consist in reimbursement for dental care provided through duly licensed dentists and for furnishing necessary appliances, drugs, medicines and supplies, prosthetic appliances, orthodontic appliances, precious metal and ceramic restorations.

South Carolina

Bill Passed.—H. 1446 passed the house and senate March 30. It proposes a resolution to the effect that officials of the schools in Anderson County be requested to accept certificates signed by chiropractors, as well as medical doctors, as to disability preventing pupils from attending school.

Bill Enacted.—H. 1157 has become chapter 872 of the Laws of 1946. It provides that no person or combination of persons shall practice or attempt to practice as a dental laboratory technician without a certificate or registration either as a registered apprentice or as a registered dental laboratory technician issued pursuant to the provisions of this act by the state board of dental examiners. The practice of a dental laboratory technician is defined as "the fabrication of prosthetic dental appliances, such as the using of gold, other metals or combination of metals, plastics, porcelains, artificial teeth or other materials in the manufacture of appliances worn in the oral cavity, replacing teeth and tissue or worn on or around the teeth."

Medical News

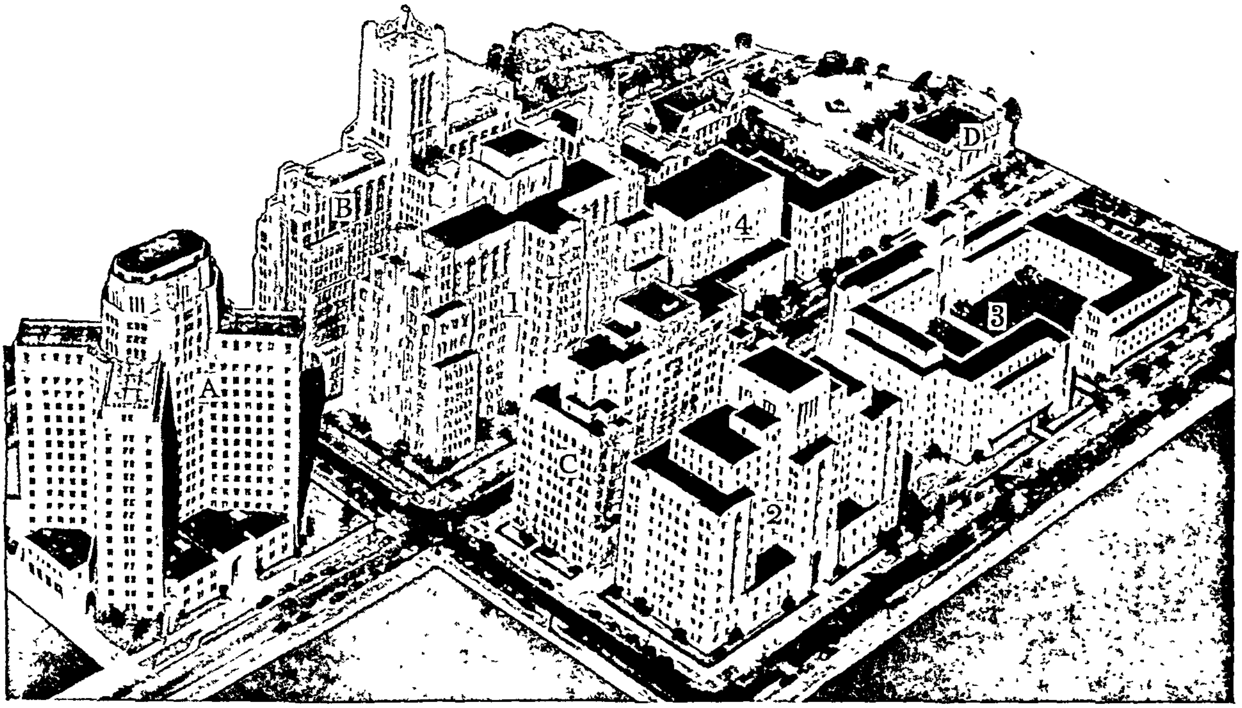
(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ARIZONA

State Medical Meeting.—The Arizona State Medical Association will hold its 1946 session May 2-3, under the presidency of Dr. Charles P. Austin, Phoenix. Among the speakers will be the following members of the faculty at Baylor University College of Medicine, Houston:

Dr. James A. Greene, Physical Findings in Diseases of the Lung.
Dr. James Greenwood Jr., Craniocerebral Trauma.
Dr. Paul A. Wheeler, Evaluation of Changes in Gangrene of the Extremities.
Dr. George W. Salmon, Management of Pyogenic Meningitis.
Dr. Herman W. Johnson, Causes of Sudden Death in the Obstetric Patient.

The guest speakers will hold clinical pathologic conferences and a round table on headache.



Appearance of Northwestern campus on completion of building project: 1, institute for medical research; 2, new hospital; 3, cancer and associated clinics; 4, education development. Existing buildings: *A*, Wesley Memorial Hospital; *B*, Ward Memorial Building; *C*, Passavant Hospital; *D*, Thorne Auditorium.

ILLINOIS

Personal.—Dr. George H. Peterson, Elgin, recently a captain in the medical corps, Army Air Force, has been appointed medical director of Fairbanks Morse and Company, Beloit, Wis. ——Dr. Samuel B. Peacock, Pittsfield, on March 3 completed fifty years of practice in Pike County.——Dr. David Louis Steinberg, Chicago State Hospital, has been named acting superintendent of the Elgin State Hospital, succeeding the late Dr. Charles F. Read.——Dr. Thomas E. Kallal was elected a trustee of the town of Cicero, April 2.

Chicago

Building Program at Northwestern.—Construction of the Morton Clinic for Neuropsychiatry is expected to be the first unit in a proposed building program on the Chicago campus of Northwestern University. The medical projects included in the general expansion work call for ten new buildings, which, together with equipment and endowment for fellowships, libraries, the publication of research and a staff of medical investigators, will require a sum ranging from $63,000,000 to $95,000,000. The major project will be the Institute for Medical Research, which will undertake investigation into the many unsolved problems of medicine, especially in the field of the degenerative diseases, such as heart ailments, cancer, high blood pressure and kidney disorders, that are incident to adulthood and old age. Plans for housing the institute call for a twenty story building, to be erected on Fairbanks Court immediately south of the Montgomery Ward Memorial Building, which now houses the medical and dental schools, and the university college, an evening division. The building, which will cost approximately $6,000,000, will be of Gothic architecture in conformity with other buildings on the Chicago campus. It will be completely furnished with the most modern facilities and equipment and will contain ample space to house all the specialties involved in medical research. At the heart of the program will be the provision for attracting to the institute eminent medical investigators and for developing younger men who show promise in research. For this purpose there will be required an endowment of $12,000,000, a sum sufficient to maintain at the institute men of the highest ability in medical research. Assisting these men will be holders of working fellowships, carefully selected for aptitude in research, who will receive adequate stipends while they carry on graduate study. In addition the institute will vastly increase its effectiveness in research through its close association with other developments in the projected medical center. These include a neuropsychiatric clinic, a cancer clinic, a urologic institute, an eye hospital, a woman's hospital, a school of nursing, a children's hospital, a university clinic and an expansion of a general hospital. These nine buildings, which will be erected on the campus, will require an expenditure of $16,800,000. Large endowments will be required to maintain the buildings and provide the best possible staff for teaching and research. Of these sums approximately $1,500,000 is now available for the neuropsychiatric clinic through a bequest from the late Mrs. Joy Morton. It is anticipated that the entire project covering the additions of existing facilities on the campus will take about twenty-five years, and it is hoped that a substantial start may be reached by 1951, when the university will observe its one hundredth anniversary. The Chicago campus of the university is celebrating its twentieth anniversary this year, since the cornerstones of the first four buildings were laid on June 11, 1926. The building housing the medical and dental schools was provided with a gift of more than $4,500,000 by Mrs. Montgomery Ward, who later gave a $4,000,000 sum to endow both schools permanently. Passavant Memorial Hospital was formally opened in May 1929, and the new Wesley Memorial Hospital was finally occupied in the fall of 1941.

KANSAS

State Medical Meeting.—The eighty-seventh session of the Kansas Medical Society will be held in Wichita, April 22-25, under the presidency of Dr. William P. Callahan, Wichita. Among the speakers will be:

Dr. Mitchell I. Rubin, Buffalo, N. Y., Acute Glomerulonephritis in Childhood.

Dr. Andrew C. Ivy, Chicago, Jaundice: The Differential Therapeutic Diagnosis.

Dr. John M. Waugh, Rochester, Minn., Carcinoma of the Rectum and Rectosigmoid: Choice of Operative Procedure with Reference to Preservation of the Sphincters.

Dr. Francis L. Lederer, Chicago, Conservation of Residual Hearing.

Dr. James Robert Willson, Chicago, Principles of Treatment in Pre-Eclampsia and Eclampsia.

Dr. Wallace E. Herrell, Rochester, Minn., Clinical Use of Penicillin.

Dr. Mather Cleveland, New York, External Skeletal Fixation of Fractures

Dr. Lowell D. Snorf, Evanston, Ill., Influence of Complications on the Management of Peptic Ulcer.

Dr. Maurice N. Walsh, Minneapolis, Psychosomatic Problems of Everyday Medical Practice.

Dr. Howard Rommel Hildreth, St. Louis, Mo., Tear Sac Surgery.

The annual banquet will be addressed by Rev. Alphonse M. Schwitalla, S.J., St. Louis, Mo, on "Medicine in Current Federal Legislation."

MICHIGAN

Personal.—Dr. James F. Darby, St. Ignace, on February 13 completed fifty years in the practice of medicine.——Dr. Franklin H. Top, Detroit, director of the division of communicable disease and epidemiology, Detroit Department of Health, left February 20 for Europe, where he will serve as consultant on diphtheria in occupied countries. Martin Frobisher, Sc.D., Baltimore, will serve with Dr. Top in the army's diphtheria control program.——On February 6 the Clare Kiwanis Club gave a dinner in honor of Dr. Frederick C. Sanford, who has been practicing in the community since 1890.

Society Plans Library.—The Wayne County Medical Society is considering the establishment in the medical society building of a periodical library, the initial expense to be financed by voluntary donations from members of the society. The medical library in Detroit is unique in that it has a triple sponsorship, says the *Detroit Medical News*. It is nominally a branch of the public library system, it receives partial support in an annual donation of 50 cents per member of the county medical society and it is housed in one of the buildings of Wayne University College of Medicine, Detroit, which provides quarters and the service of one librarian. The library committee of the society recently concluded a study showing the inaccessibility of the existing library to members of the society. It rejected the idea of moving the library to the county society headquarters because of inadequate housing facilities and because the medical school must maintain an adequate library to keep its approved status. It was with this consideration that the library committee recommended the creation of a periodical library calling for an allotment of $500 a year by the society to maintain the library. The committee has been assured that the library commission will provide a part time librarian to assist in the maintenance of the library. Another recommendation of the society's committee was that the historical collections at present housed in the medical library be transferred to the society library, where it will remain permanently.

MONTANA

W. F. Cogswell Resigns After Thirty-Three Years' Service.—On April 1 Dr. William F. Cogswell, Helena, retired as executive officer of the Montana State Board of Health, concluding thirty-three years' service. He has been succeeded by Dr. Burton K. Kilbourne, Helena. Dr. Cogswell plans to devote his time to the preparation of a history of Rocky Mountain spotted fever research work in Montana but will continue his association with the state board with the title of permanent consultant. Dr. Kilbourne graduated at the Kansas Medical College, Topeka, in 1904 and joined the state board of health in 1935 as state epidemiologist, the position he held at the time of his new appointment. On March 27 a testimonial dinner was held in honor of Dr. Cogswell in Helena.

NEBRASKA

University News.—On March 23 Edmund V. Cowdry, Ph.D., professor of anatomy, Washington University School of Medicine, St. Louis, gave the commencement address at the University of Nebraska College of Medicine, Omaha, on "Facing the Future in Medicine."

Personal.—Dr. Ernest T. Manning, Omaha, was recently elected chairman of the Nebraska State Board of Medical Examiners, succeeding Dr. Earle G. Johnson, Grand Island.——Dr. Fred P. Long, North Platte, who has been in military service, has returned to the state department of health as director of communicable disease control.

Ebert Prize for Research on Sclerosing Agent.—Paul Jannke of the University of Nebraska College of Pharmacy has been awarded the 1945 Ebert Prize by the American Pharmaceutical Association for his research on the sclerosing agent sodium morrhuate. According to an announcement his experiments revealed that, contrary to general belief, the more nearly saturated fatty acids of cod liver oil are the most satisfactory sclerosing agents, and their action was shown to produce a minimal and only brief irritation.

NEW YORK

New Director of Cancer Control.—Dr. Morton L. Levin, Albany, since 1939 assistant director of the division of cancer control, New York State Department of Health, has been appointed provisionally to the position of director, according to *Health News*. Dr. Levin graduated at the University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, in 1930. For the past ten years he has devoted his activities exclusively to the medical, educational and public health aspects of cancer control. He was formerly a member of the staff of the New York State Institute for the Study of Malignant Diseases, Buffalo, and was formerly assistant director with the New York State Legislative Cancer Survey Commission.

First Woman County Health Commissioner.—Dr. Sue H. Thompson Gould, Hudson, has been appointed for a six year term as commissioner of health for Columbia County, succeeding Dr. Wilfrid L. J. McDonald, Hudson, who resigned to enter private practice. *Health News* reports that she is the first woman to hold the position of county health commissioner in New York State. As commissioner of health of Columbia County, Dr. Gould will continue to carry on duties which she assumed temporarily several years ago. In December 1942, after qualifying as a health officer, grade 1, under the provisions of the New York State sanitary code, she was appointed substitute county health commissioner to replace Dr. McDonald during his absence in military service. She served continuously in that capacity to the time of her recent permanent appointment. Dr. Gould graduated at Rush Medical College, Chicago, in 1928.

New York City

Current Health Problems.—The health education department of the city board of education and the committee on medical information of the New York Academy of Medicine conducted a conference, March 27-28, on current health problems. Among the speakers were:

Dr. Edward J. Stieglitz, Washington, D. C., Personal Preventive Medicine.

Monica D. Ryan, Teacher Health.

Dr. Lauretta Bender, The Maturation Process of the Adolescent.

Mrs. Isabelle Forst, Brooklyn, The Adolescent in School

Meeting of Standard Oil Company Physicians.—The medical department of the Standard Oil Company (New Jersey) held its first international conference of company physicians, March 18-22. More than fifty medical officers from Latin America, the Dutch East and West Indies, France, Canada and the United States attended the session. The company medical department was established twenty-eight years ago and has grown from an office with one part time physician to a worldwide organization with eleven hospitals and more than 150 physicians and 1,500 nurses and attendants. Dr. Robert C. Page was recently named general medical director of the company (THE JOURNAL, February 9, p 364).

Clinical Research Meeting.—The New York Academy of Medicine will hold a meeting June 5 to provide a forum in which research workers of New York City and vicinity may present results of original research in clinical medicine. This meeting is being arranged by the committee on medical education of the academy with the following stipulations:

Presentations will be confined to original research work in clinical medicine (including medicine, surgery, pathology, obstetrics and all other clinical branches) or be applicable to clinical medicine.

Preference will be given to papers which have not been presented before a national or local society (other than intramural)

Papers will not be accepted which have appeared in print prior to presentation.

Additional information may be obtained from Dr. Mahlon Ashford, secretary of the Committee on Medical Education of the New York Academy of Medicine, 2 East 103d Street, New York 29.

Fellowship in Diabetes.—The New York Diabetes Association offers a fellowship for the study of diabetes mellitus at a salary of $150 a month for a period of six months. This fellowship consists in training a doctor in the treatment of diabetes in both clinical and laboratory work during the months of May and June, having him act as resident for the diabetic children's camp of the association during July and August (when he would receive his board and lodging), and devote his time in September and October to the writing up of the results of treatment at the diabetes camp, which, if sufficiently meritorious, would be recommended for publication. The preliminary training would take place under the auspices of various recognized specialists in diabetes in Greater New York. Applications, stating qualifications, should be made in writing as soon as possible to Dr. Herman O. Mosenthal, 889 Lexington Avenue, New York 21.

OHIO

Centennial Meeting of State Association.—The one hundredth anniversary of the Ohio State Medical Association will be observed at a meeting in Columbus, May 7-9. The program will be divided between the Neil House and the Deshler-Wallick Hotel. The guest speakers to participate in the centennial session will be:

William H Feldman, D V M., Rochester, Minn, Evidence of Therapeutic Effects of Streptomycin in Experimental Tuberculosis
Philip D Jordan, Ph D, Minneapolis, Forever as He Rides
Dr Roy D. McClure, Detroit, The Surgical Treatment of Bleeding Peptic Ulcer.
Brig. Gen. William C. Menninger, Washington, D. C., Readjustment of the Disabled Veteran to Civilian Life
Dr. Carl V. Moore, St. Louis, Recent Advances in the Understanding and Therapy of Anemias
Dr. Walter L. Palmer, Chicago, Medical Management of Gastrointestinal Disturbances
Dr. Stanley P. Reimann, Philadelphia, Present Status of Cancer Research.
Dr. Homer F. Swift, New York, Relationship Between Rheumatic and Hemolytic Streptoccal Infections

PENNSYLVANIA

Philadelphia

Pathologist Named Medical Director of Commercial Solvents.—Dr. Lawrence W. Smith has resigned as professor of pathology, Temple University School of Medicine, to become medical director of the Commercial Solvents Corporation, New York. Dr. Smith has been consultant to the corporation since July 1, 1945 but took over the new position of medical director on a full time basis February 15.

TEXAS

Memorial Fund for Physician.—Voluntary cash contributions are being accepted to create the James L. Rentfro Memorial Fund in honor of the late Brownsville physician. It is hoped to obtain $25,000 to construct an addition to Mercy Hospital, Brownsville, to be known as the James L. Rentfro wing

Service Awards.—Chauncey D. Leake, Ph D, dean and vice president, University of Texas Medical Branch, Galveston, has been presented with the senior service award for community service by the Galveston Junior Chamber of Commerce. Dr. Henry P. Ledford, Wichita Falls, was honored recently by the Wichita Falls Advertising Club as one of two persons named for personal and philanthropic service to the city in 1945. The award was made to Dr. Ledford in recognition of a substantial donation to the Young Men's Christian Association building fund, of presentation of residence property to Hardin-Simmons University, Abilene, for resale, the proceeds going to a dormitory building fund, and of presentation by Mrs. Ledford of a grand piano to the music department of Hardin College.

VERMONT

Changes in the Faculty.—The University of Vermont College of Medicine, Burlington, announced the promotion of Dr. Wilhelm Raab, assistant professor of clinical medicine, to professor of experimental medicine, of Dr. Paul K. French, associate professor of clinical medicine, to professor of clinical medicine and of Dr. Walford Rees, assistant professor of surgery, to professor of clinical surgery. Other changes include the following appointments:

Dr. Raymond M. P. Donaghy, associate professor of neurosurgery.
John P. Marbarger, Ph D, instructor in physiology.
Paul G. LeFevre, Ph D, instructor in physiology.
Dr. Thomas G. Morrione, assistant professor of pathology.
Dr. Ernest Stark, assistant professor of pathology.
William van Bogaert Robertson, Ph D, assistant professor of experimental medicine
R F. Krause, Ph D., research associate in biochemistry.
Edwin E. Hays, Ph D, assistant professor of biochemistry.

Rear Admiral William J. C. Agnew, assistant chief, Bureau of Medicine and Surgery, Navy Department, Washington, D. C., who graduated at the University of Vermont College of Medicine, Burlington, in 1914, the year he entered the navy, gave the address at the commencement of the medical school April 3.

VIRGINIA

Personal.—Dr. Edward V. Jones Jr., Hampton, has recently become director of venereal disease control for the Richmond Health Department, succeeding Dr. Carleton H. Waters, who has been transferred by the U. S. Public Health Service to Norfolk, where he will have charge of the rapid treatment center for venereal diseases.

Tri-State Election.—Dr. Silas Raymond Thompson, Charlotte, N. C., was named president-elect of the Tri-State Medical Association of the Carolinas and Virginia at its meeting in Richmond February 25-26 and Dr. John Wyatt Davis Jr., Lynchburg, was installed as president Other officers include Drs. James Asa Shield, Richmond, William W. Fennell, Rock Hill, S. C., and Richard B. Davis, Greensboro, N. C., vice presidents; Dr. James M. Northington, Charlotte, N. C., was reelected secretary-treasurer. It was decided to hold the 1947 meeting at Greensboro, N. C.

WEST VIRGINIA

New Director of Communicable Diseases.—Dr. Charles Calhoun Hedges, Vallejo, Calif., who began his public health career in West Virginia in 1923, has been appointed by Dr. John E. Offner, Weston, state health commissioner, as director of the bureau of communicable diseases Dr. Hedges has been located at Santa Rosa, Calif., since May 1935, where he has been director of health and hospitals. Previously he had served as assistant medical director at Johns Hopkins Hospital, Baltimore, and as superintendent at several New York hospitals.

Temporary Approval on Laboratories.—At a recent meeting of the West Virginia State Medical Association, approval was given to certain recommendations to the state health department covering changes in the present method of certification of laboratories:

That test specimens be sent to the laboratories monthly instead of continuing the present system of sending 200 tests in three or four months of the year

That laboratories seeking recertification be required to send their technicians to the state hygienic laboratory in Charleston for such a period of time as is required by the department for a test of their efficiency. With the knowledge that the department has of the equipment of the various laboratories throughout the state, the committee believes that a temporary certification should be granted on the successful completion of this examination.

That the state department of health inspect the laboratories and examine the technicians at their work within a month after temporary certification.

That, when a laboratory's percentage of readings shows an abnormal number of errors as determined by the monthly tests, an immediate investigation should be made by the department with a view of determining the cause of error and correcting it

That as soon as the department is satisfied with the equipment of the laboratories and the competence of its technicians a permanent certification should be given the laboratories, regardless of the time of year these requirements have been fulfilled.

WISCONSIN

New State Laboratory Proposed.—The Wisconsin State Board of Health is planning to ask the 1947 legislature to appropriate about $500,000 to construct a new state laboratory of hygiene in Madison. Existing laboratory facilities are inadequate to meet the increasing development.

Society Observes One Hundredth Anniversary.—The Medical Society of Milwaukee County will hold a special program April 27-May 3 to celebrate the one hundredth anniversary of its organization. Scientific lectures will be presented as well as exhibits. The Woman's Auxiliary will also hold a special program to commemorate the event.

William Snow Miller Lecture.—The nineteenth William Snow Miller Lecture, sponsored by Alpha Pi of Phi Beta Pi, was delivered April 1 at the University of Wisconsin Medical School, Madison, by Olof Larsell, Ph D., professor of anatomy, University of Oregon Medical School, Portland. His subject was "The Anatomy of the Cerebellum as Related to Function."

Research Foundation, Inc.—Eight Marshfield doctors have filed incorporation papers with the secretary of state for the Marshfield Research Foundation for Medicine and Allergy, a nonprofit organization to promote research and education in the fields of medicine and allergies. The incorporators are Drs. Robert S. Baldwin, Frank A. Boeckman, Lyman A. Copps, Karl H. Doege, Stephan Epstein, George L. McCormick, Allen L. Millard and Roy P. Potter, all of Marshfield.

Assistant State Health Officer.—Dr. Edwin H. Jorris, Madison, who recently was released from service in the navy, has been named assistant state health officer for Wisconsin. Dr. Cornelius A. Harper, Madison, formerly state health officer, has been acting as assistant at the request of the board. Dr. Jorris graduated at the University of Minnesota Medical School, Minneapolis, in 1930. In 1936 he entered the field of public health as health officer of District No. 4 with headquarters at Sparta. In February 1941 he was promoted to the positions of supervisor of local health services and director of the division of tuberculosis. He was commissioned a lieutenant commander, medical corps, U. S. Naval Reserve, in January 1943.

GENERAL

Meeting of X-Ray Technicians.—The American Society of X-Ray Technicians will hold its eighteenth convention in the Hotel Jefferson, St. Louis, June 10-14. Walter J. Clark, R.T., New York, is president and Genevieve J. Eilert, R.T., 16 Fourteenth Street, Fond du Lac, Wis., is secretary.

Special Society Election.—Dr. Wiley D. Forbus, Durham, N. C., was elected president of the American Association of Pathologists and Bacteriologists at its meeting in Chicago, March 8. Other officers include Malcolm H. Soule, Sc.D., Ann Arbor, vice president; Dr. Howard T. Karsner, Cleveland, secretary; Dr. William B. Wartman, Cleveland, assistant secretary, and Dr. Alan R. Moritz, Boston, treasurer.

George Larson Goes to Pennsylvania.—Mr. George Larson, director, Midwest Field Army, American Cancer Society, with headquarters in Chicago, has been named executive director of the Pennsylvania division of the cancer society, effective April 1. This is the first time that the division has had an executive director. Mr. Larson, until joining the American Cancer Society a few years ago, was assistant secretary of the State Medical Society of Wisconsin.

Cancer Committee Issues Pamphlet for Public.—The Cancer Committee of the Iowa State Medical Society has issued a pamphlet on cancer prepared for distribution to the public. It has been sent to all newspapers in Iowa with requests for republication in whole or in part. Copies of the pamphlet are obtainable from Mrs. C. V. McCarthy of Mason City or from Dr. Edmund G. Zimmerer, director of the Division of Cancer Control of the State Department of Health, Des Moines.

Border Medical Association.—The United States-Mexico Border Public Health Association will hold its fourth meeting at El Paso, Texas, and Juarez, Chihuahua, April 29-May 1. The general purpose of this association is to promote and improve public health conditions in the border areas of the United States and Mexico. The president of the association is Mr. V. M. Ehlers, C.E., sanitary engineer for the state of Texas. The secretary is Dr. Harold A. Wood, El Paso.

Blue Cross Hospital Plan Commission Appeals to Trade Union Members.—"Hospitalization for Trade Union Members," a handbook of information concerning the nation's nonprofit Blue Cross hospitalization plans, has been issued by the National Enrolment Office of the Blue Cross Commission, 370 Lexington Avenue, New York. The booklet is a service of the recently established labor division, which coordinates Blue Cross hospitalization with union health insurance programs and furnishes Blue Cross information to union members and their families. The book includes a list of almost eighty unions, most of them of considerable size, which are enrolled with Blue Cross.

Mead Johnson and Borden Awards.—The American Institute of Nutrition announces that the Mead Johnson and Company Prize for 1945 has been awarded to Irwin C. Gunsalus, Ph.D., associate professor of bacteriology, Cornell University, Ithaca, N. Y., and to Esmond E. Snell, Ph.D., associate professor of biochemistry, University of Wisconsin, for their discoveries and investigations in the field of the B complex vitamins with special reference to pyridoxal and pyridoxamine. Announcement is also made by the institute of the granting of the Borden Award in nutrition to Dr. Philip C. Jeans, professor of pediatrics, and to Genevieve Stearns, Ph.D., research professor of pediatrics, both of the State University of Iowa College of Medicine, Iowa City, for their valuable contributions on the nutritive significance of milk and various components of milk in the maintenance of infant and child health.

Sanitation Research Project.—As a means toward providing increased health protection to railway passengers and employees as well as to the general public the Association of American Railroads has established a sanitation research project. Under the direction of Abel Wolman, D.E., Baltimore, consulting engineer and professor of sanitary engineering at the Johns Hopkins University, the project will function in collaboration with the joint committee on railway sanitation, an advisory organization of the Association of American Railroads which has been operating since 1922. Designed to cover all phases of railway sanitation such as food handling, water supply and treatment and disposal of wastes on railway cars and in terminals, the first objective of the project is the development of a sanitary means for the handling and disposal of toilet wastes from passenger cars. Offices and laboratories are located at 1103 West Pratt Street, Baltimore 23 (Mount Clare Shops of the Baltimore and Ohio Railroad).

Narcotic Violations.—The Bureau of Narcotics, U. S. Treasury Department, announces that Dr. Jean C. Marchand was convicted in the Salem District Court at Salem, Mass., of violating the state narcotic law and was sentenced, February 16, to serve a term of one year in the Essex County House of Correction, which sentence was suspended and he was placed on probation for a period of two years on condition that he take treatment for his addiction to narcotics. It was also reported that Dr. Paul D. Whitehead pleaded guilty in the U. S. District Court at Little Rock, Ark., to a narcotic violation and was sentenced February 25 to serve a term of three years. Dr. Celsus Price Bell, Welch, Okla., pleaded guilty in the U. S. District Court at Tulsa, Okla., March 15, to a narcotic violation and was sentenced to serve a term of eighteen months, which sentence was suspended and he was placed on probation for a like period. One of the conditions of the probation was that the doctor was not to prescribe narcotic drugs or apply for reregistration under the federal narcotic law.

Ashford Award Goes to James Watt.—Dr. James Watt, U. S. Public Health Service, has been given the Bailey K. Ashford Award. Dr. Watt has been carrying on investigative studies of diarrheal diseases, especially Shigella and Salmonella infections. He demonstrated the high incidence of Salmonella infections in certain regions of Louisiana and was seeking possible explanations for this exceptional regional incidence when his investigations were temporarily interrupted by his detail to China. The award is presented through the American Society of Tropical Medicine by Eli Lilly and Company and consists of a bronze medal, a grant of $1,000 and traveling expenses to the meeting. It is given to a person under 35 years of age who has made a noteworthy contribution to the field of tropical medicine. Eli Lilly and Company will make the award available on three more occasions. Dr. Watt, who entered the U. S. Public Health Service in 1938, was working in Chungking with the UNRRA when the award was presented. It was accepted in his absence by Dr. Rollo E. Dyer, Bethesda, Md., director of the National Institute of Health.

Industrial Hygiene Officers and Knudsen Award.—Col. Anthony J. Lanza, associate medical director of the Metropolitan Life Insurance Company, New York, received the seventh William S. Knudsen Award for the most significant contribution to the field of industrial medicine in the current year at the thirty-first banquet of the American Association of Industrial Physicians and Surgeons at the Hotel Sherman, Chicago, April 11. Dr. Lanza was given the award because of the very large task which he handled so ably during the war in the Office of the Surgeon General, U. S. Army. His division of industrial hygiene and industrial medical service had under its supervision at the peak of employment over 900,000 civilians, probably the largest employed group ever to come under such supervision. From March 1942, when he was appointed as director, occupational health division, preventive medical service, in the Office of the Surgeon General, Colonel Lanza served with the government until February 1945. Dr. Henry S. Brown, medical director, Michigan Bell Telephone Company, Detroit, was named president-elect of the American Association of Industrial Physicians and Surgeons during its meeting, and Dr. Loyal A. Shoudy, medical director, Bethlehem Steel Company, Bethlehem, Pa., was inducted into the presidency. Other officers include Drs. Harold A. Vonachen, medical director, Caterpillar Tractor Company, Peoria, Ill., and Alfred H. Whittaker, medical director, Detroit Industries, Detroit, vice presidents; Dr. Frederick W. Slobe, Chicago, secretary, and Dr. Edward C. Holmblad, Chicago, managing director. A feature of the election was the presentation to Dr. Shoudy by Dr. Melvin N. Newquist, medical director of the Texas Company and retiring president of the association, of a plaque inscribed "To Loyal A. Shoudy, M.D., charter member and twice president, in recognition of distinguished service to the American Association of Industrial Physicians and Surgeons." Dr. Shoudy had been president from 1923 to 1925.

Deaths

Milton Joseph Rosenau ⊕ noted authority on preventive medicine, died at his home in Chapel Hill, N. C., April 9, aged 77.

Dr. Rosenau was born in Philadelphia Jan. 1, 1869. He received his preliminary education in the public schools of Philadelphia, graduated at the University of Pennsylvania Department of Medicine in 1889 and took postgraduate work in Berlin, Paris and Vienna. Dr. Rosenau became interested early in sanitation and public health. He was surgeon in the U. S. Public Health and Marine Hospital Service from 1890 to 1909. For the last ten years of this period he served as director of the Hygienic Laboratory, resigning in 1909 to become Charles Wilder professor of preventive medicine and hygiene at Harvard Medical School, Boston, the first such department in the United States, a position he held until 1935, when he became professor emeritus. He was professor of epidemiology at the Harvard School of Public Health from 1922 to 1935. He went to the University of North Carolina in 1936 to direct the then newly created department of public health, serving as dean of the School of Public Health there from 1940 to 1941, when he became director of the school. This position he held at the time of his death as well as his professorship in epidemiology. He was also lecturer in preventive medicine and public health at Bowman Gray School of Medicine, Winston-Salem.

Milton Joseph Rosenau, M.D., 1869-1946

During his career Dr. Rosenau had served as a member of the advisory board, National Health Council, U. S. Public Health Service, the Massachusetts State Department of Health, director of Antitoxin and Vaccine Laboratory and chief of its division of biologic laboratories. He had been quarantine officer in San Francisco from 1895 to 1898, delegate to the tenth International Conference on Hygiene and Demography and the thirteenth International Congress of Medicine and Surgery, member of the International Commission for the Revision of Nomenclature of the Causes of Deaths, Paris, sanitary expert to the second Pan American Conference in Mexico and special lecturer in tropical diseases at Georgetown University, Washington, D. C. He had been secretary of the Section on Pathology and Physiology of the American Medical Association, 1907-1908, serving as chairman the following year. He held membership in various scientific and related bodies, serving as president of the Society of American Bacteriologists, American Association of Medical Milk Commissions, American Society of Tropical Medicine, American Society of Epidemiologists and American Association of Immunologists. At the time of his death he had been president-elect of the American Public Health Association. He had assisted the American Red Cross in different capacities and from 1917 to 1919 was medical inspector with the rank of commander in the U. S. Naval Reserve Forces, retiring with the rank of captain. He was also a retired assistant surgeon general of the U. S. Public Health Service.

Dr. Rosenau was credited with the organization of the quarantine at Santiago and other Cuban ports, 1898-1899. He is the author of Disinfection and Disinfectants, 1902; Experimental Studies in Yellow Fever and Malaria, 1904; the Immunity Unit for Diphtheria Antitoxin, 1905; a Method of Inoculating Animals with Precise Amounts, 1905; the Cause of Sudden Death Following the Injection of Horse Serum, the Origin and Spread of Typhoid Fever, 1907; The Standardization of Tetanus Antitoxin, 1908; the Milk Question, 1912, and Preventive Medicine and Hygiene, sixth edition, 1935. His prolific writings included articles on anaphylaxis, foot and mouth disease, pasteurization, milk and its relation to the public health, viability of the tubercle bacillus, infantile paralysis, organic matter in the expired breath, influenza and reports on sanitary and bacteriologic subjects.

Dr. Rosenau's portrait hangs in the Administration Building of Harvard. He also received the Sedgwick Medal of the American Public Health Association in 1934 for his achievements in public health.

William Waddell Duke, distinguished internist, died at his home in Kansas City, Mo., aged 62.

Dr. Duke was born in Lexington, Mo., Oct. 18, 1883. He graduated at Yale University in 1904 and the Johns Hopkins University School of Medicine in 1908. After internship at the Massachusetts General Hospital, Boston, he took postgraduate work in Vienna and Berlin from 1910 to 1912, when he entered private practice in Kansas City, devoting his interest to internal medicine.

Dr. Duke was professor of experimental medicine at the University of Kansas School of Medicine, Rosedale, from 1914 to 1918 and visiting physician at the Christian Church Hospital, Kansas City, from 1918 to 1924. He was a member of the Council of National Defense and captain of the American Red Cross during World War I and subsequently a lieutenant colonel in the Officers Reserve Corps. He was a member of numerous local and national scientific groups and was a past president of the American Association for the Study of Allergy.

Dr. Duke had made many important observations in allergy and in 1924 had been awarded the silver medal of the American Medical Association for his research, the citation specifically according him recognition for the completeness of his work. The annual gold medal of the Medwest Forum of Allergy was presented to him in 1941 for "distinguished and outstanding contributions in the field of allergy." Dr. Duke was the author of "Oral Sepsis in Relationship to Systemic Disease" and "Allergy, Asthma, Hay Fever, Urticaria and Allied Manifestations of Reaction" and had written chapters in the Practitioners' Library of Medicine and Surgery, Cyclopedia of Medicine and Modern Home Medical Adviser.

Attributed to him are many discoveries, notably in physical allergy. As a pioneer he contributed to the knowledge of oral sepsis, transfusion, anemia, the palm color test, bleeding time, and the relation between platelets and hemorrhagic disease. Included in his discoveries are certain aspects of the role of blood potassium and calcium in the heart beat.

Frederic Moir Hanes ⊕ Durham, N. C.; Johns Hopkins University School of Medicine, Baltimore, 1908; born in Winston-Salem, N. C., Sept. 18, 1883; Florence McAlister professor of medicine at the Duke University School of Medicine; served as associate professor of pathology at Columbia University in New York for three years and associate professor of medicine at Washington University in St. Louis for a year; professor of therapeutics at the Medical College of Virginia in Richmond from 1914 to 1916; specialist certified by the American Board of Internal Medicine; member of the Association of American Physicians and the American Clinical and Climatological Association; fellow of the American College of Physicians; served as lieutenant colonel, commanding U. S.

Army Hospital number 65, American Expeditionary Forces in France, during World War I; at one time connected with the Presbyterian Hospital and Rockefeller Institute in New York and the Queen's Square Hospital, London; associated with the Duke Hospital; died suddenly March 25, aged 62.

John Chadwick Oliver ⊕ Cincinnati; Miami Medical College, Cincinnati, 1885; born in Cincinnati, May 7, 1862; professor emeritus of surgery at the University of Cincinnati College of Medicine; formerly dean and professor of operative surgery at his alma mater; past president of the Academy of Medicine of Cincinnati; member of the American Surgical Association and the Southern Surgical Association; fellow of the American College of Surgeons; in 1939 his portrait was presented to the Christ Hospital during its golden jubilee; he was consultant in surgery at the hospital, for many years president of the staff and the last surviving member of the original staff; consulting surgeon, St. Francis and Cincinnati General hospitals; *in 1929 was awarded the honorary degree of doctor of science* by the University of Cincinnati; died March 14, aged 83.

Henry Richardson McGraw ⊕ Denver; College of Physicians and Surgeons, Baltimore, 1901; born in Washington, D. C., Nov. 27, 1873; served as president of the state board of medical examiners; past president of the Medical Society of the City and County of Denver; member of the Western Surgical Association; at one time instructor of anatomy at the Denver and Gross College of Medicine; fellow of the American College of Surgeons; chief of the surgical staff of Fitzsimons Hospital during World War I; specialist certified by the American Board of Surgery; affiliated with the Denver General Hospital; died December 6, aged 72.

Richard Berry Adams ⊕ Portland, Ore.; University of Oregon *Medical School, Portland, 1928*; served as vice president of the Oregon State Medical Society; died December 20, aged 47.

Alexander William Adamski ⊕ Racine, Wis.; Marquette University School of Medicine, Milwaukee, 1934; interned at the St. Luke's Hospital in Milwaukee and the Norwegian Lutheran Deaconesses' Home and Hospital in Brooklyn; on the staffs of St. Luke's and St. Mary's hospitals; assistant attending physician, Sunny Rest *Sanatorium*; died January 1, aged 35.

William E. Angell, Rocheport, Mo.; Missouri Medical College, St. Louis, 1895; died in the Noyes Hospital, Columbia, December 25, aged 72, of lymphosarcoma.

N. D. Bachman, Cincinnati; Louisville (Ky.) Medical College, 1894; died December 13, aged 72, of arteriosclerotic heart disease.

***Francis Marion* Bruce**, Homerville, Ga.; Maryland Medical College, Baltimore, 1904; member of the American Medical Association; member of the county board of health; died in the Ware County Hospital, Waycross, December 22, aged 63, of *uremia* and heart disease.

Theodore C. Burnett, Carmel, Calif.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1887; associate *professor* of physiology emeritus at the University of California Medical School; died in the Peralta Hospital, *Oakland, December* 18, aged 84, of carcinoma.

Edward M. Cowles, Santa Monica, Calif.; Western Reserve University Medical Department, Cleveland, 1891; died in St. Erne Sanitarium, Inglewood, December 5, aged 83, of sclerosis of the brain.

Charles Davis Harlan, Keswick, Iowa; State University of Iowa College of Medicine, Iowa City, 1901; served during World War I; died in Oskaloosa December 21, aged 65, of *pneumonia* following an automobile accident.

Harry Walton Howden, Red Lion, Pa.; Hahnemann Medical College and *Hospital of Philadelphia*, 1905; served as medical examiner of schools; died in the York (Pa.) Hospital, December 13, aged 63.

John H. B. Jones, Petrolia, Texas; (licensed in Texas under the Act of 1907); died December 28, aged 78, of pneumonia.

Robert Dow Lowther, Norman, Okla.; Kentucky School of Medicine, Louisville, 1893; served during World War I; *died* December 15, aged 77, *of heart* disease.

Albert Rufus Lyles, Virginia, *Ill.*; St. *Louis College* of Physicians and Surgeons, 1890; member of the American Medical Association; served as president of the Cass County Medical Society; formerly *mayor* of Virginia; died in Beardstown December 18, aged 84, of intestinal *obstruction* due to adhesions.

Robert Henry McNair, Kansas City, Mo.; Jefferson Medical College of *Philadelphia*, 1890; also a graduate in dentistry; died December 9, aged 83, of coronary sclerosis and arteriosclerosis.

Alfred Andrew Robinson ⊕ *Oakland, Calif.*; Jefferson Medical College of Philadelphia, 1908; served as president *of the Utah State Society for Mental Hygiene*; chairman of the medical advisory board of the first district of Utah during World War I; died December 24, aged 64, of pernicious anemia.

Joseph Keener Swindt, Pomona, Calif.; Gross Medical College, Denver, 1902; member of the Pacific Coast Surgical Association; fellow of the American College of Surgeons; formerly member of the board of trustees of the Los Angeles County Medical Society; a major in the medical corps of the U. S. Army during World War I, serving in charge of a base *hospital at Cannes, France; on the staff of the Pomona Valley* Community Hospital; died December 18, aged 74, of cerebral thrombosis.

Charles J. Young, Danville, Ill.; Jenner Medical College, Chicago, 1904; died December 5, aged 66, of cardiorenal disease.

KILLED IN ACTION

John Wallace Cathcart, Winnsboro, S. C.; Medical College of the State of South Carolina, Charleston, 1943; interned at the Columbia Hospital in Columbia; began active duty as a first lieutenant in the medical corps, Army of the United States, on March 9, *1944*; promoted to captain on Jan. 14, 1945; served with a field unit of the first battalion, twenty-fourth division, medical detachment; killed in action in Mindanao, P. I., May 3, 1945, aged 27.

A. Leonard Hymes, Mansfield, Pa.; New York University College of *Medicine*, New York, *1939*; *interned at* the Cumberland Hospital in Brooklyn; began active duty as a first lieutenant in the medical reserve corps of the U. S. Army in June 1941; later promoted to captain in the medical corps, Army of the United States; killed in action *in the Southwest Pacific area Dec. 31, 1942, aged 28.*

Charles Roy Kerr, *Chenoa, Ill.*; Chicago College of Medicine and Surgery, *1913*; member of the American Medical Association; began active duty as a major in the medical corps, Army of the United States, on *Jan. 25, 1941*; *killed* in action in the Philippine Islands May 8, 1944, aged 59.

Clifton Andrew McClain Jr., Christiana, Pa.; Hahnemann Medical College and Hospital of Philadelphia, 1939; interned at the Hahnemann Hospital in Philadelphia; began active duty as a first *lieutenant in* the medical reserve corps of the U. S. Army *on May 7, 1941; later promoted* to captain in the medical corps, Army of the United States; died in Nato, Italy, Sept. 27, 1943, aged 29, of wounds received in action.

Charles Eugene Osborne, Vicksburg, Mich.; University of Michigan Medical School, Ann Arbor, *1926*; member of the American Medical Association; interned at the Blodgett Memorial Hospital in Grand Rapids; began active duty as a first lieutenant in the medical corps, Army of the United States, on May *24, 1941*; promoted to captain; *taken prisoner on Corregidor in April 1942;* held prisoner in the Davao Prison camp two and one-half years; died in the South China Sea Oct. 24, 1944, aged 43, while on board a Japanese prison ship which was sunk.

George Andrew Rader ⊕ Captain, M. C., U. S. Army, Washington, D. C.; Jefferson Medical College of Philadelphia, 1937; interned at the Walter Reed General Hospital, U. S. Army Medical School in *1939* and the Medical Field Service School in 1940; entered the medical corps of the U. S. Army as a first *lieutenant on July 1, 1938*; *promoted to captain on* July 1, 1941; died in the South China Sea Oct. 24, 1944, aged 33, while on board a Japanese prison ship which was sunk.

Ernest Marion Wade ⊕ Lieutenant Commander, M. C., U. S. Navy, Long Beach, Calif.; College of Medical Evangelists, Los Angeles, 1931; diplomate of the National Board of Medical Examiners; interned at the Los Angeles County General Hospital; began active duty as a lieutenant (jg) in the medical corps of the U. S. Navy on July 6, 1931; promoted to lieutenant and lieutenant commander; as regimental surgeon and executive officer of the *Fourth* Marine Hospital in Shanghai was evacuated from Shanghai and presumably sent to Bataan; for heroism in defense of Corregidor awarded the Silver Star and Purple Heart by the Army (it is unusual *for* one branch of the service to confer such an honor on a man of another branch); killed in action in the Asiatic area Dec. 15, 1944, aged 36.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 17, 1946.

Conference of Scientists of the British Empire

The Empire Scientific Conference, organized by the Royal Society, will hold meetings in London beginning June 17, Cambridge June 22, Oxford June 29 and London July 6. Prominent scientists from the empire will attend. The primary purpose of the conference is the exchange of scientific views on problems of immediate practical importance and the achievement of maximum collaboration between scientists throughout the empire. Subjects for discussion include organization of science in various countries, agricultural science, medical science, especially physiologic and psychologic factors in industry and in the tropics, and nutritional science with particular reference to indigenous people of the colonies.

The Royal Society conference will be followed by the Commonwealth Scientific Official Conference, which will discuss detailed measures to organize and promote scientific collaboration throughout the commonwealth on subjects of direct importance to the various governments concerned.

The British Central Scientific Office was formed in Washington in 1941 to facilitate the exchange of scientific information between Britain and the United States for war purposes. This organization has been changed to the British Commonwealth Scientific Office, to include missions from the dominions with the purpose of securing a common approach in the interchange of scientific information with the United States.

The Increased Use of Blood Transfusion

The Ministry of Health has made an appeal for more blood donors, stating that at least 200,000 are required. The number of donors has fallen alarmingly since the war ended, chiefly because of the false impression that transfusion is required only in wartime. In one area the number dropped from 48,000 to 12,000 and in another from 3,000 to 640. However, the use of transfusion has been widely extended. One hospital which formerly used 80 pints of blood a year now uses 30 to 50 pints every week. Throughout the country transfusion is now more generally used in the treatment of accidents, hemorrhage, burns and certain diseases. It has played an important part in reducing maternal and infant mortality.

Penicillin Treatment of Subacute Bacterial Endocarditis

The Medical Research Council reports 147 cases of subacute bacterial endocarditis treated with penicillin up to September 1945 at fourteen centers appointed by the Penicillin Clinical Trials Committee and located in principal cities. Cases treated after this date will be included in a later report. The value of penicillin for the treatment of this disease is confirmed. Of 147 patients 50 died and 81 apparently recovered; 146 were infected with streptococci, of which 136 were Streptococcus viridans. The resistance of the infecting organism, measured by usual titration methods, did not appear to be of clinical importance. When the organism was more than ten times as resistant as the standard test staphylococcus, measurement of organism resistance was apparently of therapeutic and prognostic significance.

The duration of penicillin treatment was more important than the total amount given. Thirty-six patients received 5 million units each for varying periods. Of 20 patients given 1 million units daily for five days all relapsed or died. Twelve patients were given one-half million units daily for ten days with 3 apparent cures. Of 14 receiving one-fourth million units daily for twenty days 7 have remained well. Thus it has been shown that increase of dosage is not a substitute for prolonged treatment. Since these patients have been under observation for six months and since relapses almost invariably occur within six weeks of treatment, the value of the duration of treatment is demonstrated. In previously untreated cases one-half million units daily for twenty-eight days gave better results than other methods. Inadequate treatment is apparently prejudicial to later success. No difference in results was noted with penicillin administered every three hours or by continuous intramuscular infusion.

PARIS

(From Our Regular Correspondent)

March 29, 1946.

The Food Problem in France

The food situation in France has recently become worse, as emphasized in a Paris press conference by Herbert Hoover. Besides severe drought, from which France has been suffering for some years (and which this year in Algeria and Morocco caused a famine killing thousands of people), the four years of war, the occupation and the lack of fertilizers, tillage implements and labor are responsible for a progressive diminution of cultivation of the soil. In 1945-1946 the improverished soil yielded only half of the 1938 crop. At a meeting of the society of comparative pathology of France, Letard stated that the lack of fodder has reduced the live stock. In comparison to 1938 numerical shortages were for bovines 10 per cent, sheep 40 per cent, goats 28 per cent and pigs 50 per cent. There is also considerable decrease in individual quality, which prevents the killing of the quantities of animals necessary for consumption. The shortage of grain compelled the government at the beginning of the year to resort again to bread rationing. The daily ration of 300 Gm. for each person seems exaggerated compared to the 200 Gm. of the United States, but France has no other sources of energy and qualitatively, for example proteins, the ration has not been much improved. The children suffer most, especially those between 6 and 13 years of age. Their daily ration, which during the occupation was 1,000 to 1,050 calories, has been increased to 1,500 to 1,800 calories but is still inadequate.

Results of Five Years of Food Restrictions

Five years of underfeeding, associated with abnormal conditions of living for children, fatigue, nervous shock and cold, have affected the general state of 45 per cent of children, especially boys, as noted by the National Institute of Hygiene. Boulanger, Pillet, Gayla and Launay, school physicians of the Paris district, have noted a diminution of the weight and stature of school children. Investigation in 1944 on 23,000 children from 6 to 14 years of age showed a diminution in weight of 500 to 860 Gm. (12.8 per cent in 2,980) and stationary weight in 4,860 children (8.21 per cent). Before the war the proportion of children deficient in these respects was from 0.5 to 2 per cent. Lesne has pointed out several symptoms of psychomotor instability such as apathy, agitation, cramps, physical and intellectual fatigability, nocturnal incontinence of urine and anorexia. After extensive investigation on 35,000 children from 6 to 14 years of age, Poulain, medical inspector for public health of the Lyons district, has shown an aggravation of the general state in 1945. He found that the number of children with a weight lower than normal is continually increasing. The number of deficient children doubled between 1938 and 1944 and from 1944 to 1945 has again doubled. The same investigator found that children grow more during summer than winter and that the average height of children 3 to 10 years of age agrees with the normal scale but that children

10 to 13 years of age in the prepubescent period are 2 to 3 cm. shorter than normal. The author also has found an increased number of positive tuberculin tests in school children: 4,781 positive tests in 23,936 children 3 to 13 years of age (20 per cent), of which 30 per cent need special medical care and admission to a preventorium. A steady annual increase of the number of positive tuberculin tests also has been observed by several doctors doing large scale examinations. Precocious rickets has appeared in certain children fed by their mothers. The examination of the mother's milk shows a diminution of nutritive value due to food restrictions. The number of births, 52,000 for the first quarter of 1938, increased to 55,000 for the same period in 1945. The Paris Health Service has had to organize three new maternities.

TURKEY

(From Our Regular Correspondent)

ANKARA, March 12, 1946.

Malaria Control

Malaria is still the greatest public health problem in Turkey. Although malaria control work has been under way for twenty years with a resultant good reduction in mortality, malaria remains a threat in summer and autumn. The newly appointed minister of health in January 1945 called a malaria congress of university professors, specialists and members of the Ministry of Health to reorganize malaria control work. A bill for the appropriation of 6 million Turkish pounds for seven months was introduced and passed in the National Assembly. In fifty-two of the sixty-three provinces work was initiated in June and carried on until the end of December, a campaign in which 345 physicians and almost 1,000 specially trained sanitary inspectors took part.

Draining of large swamp areas is under the direction of the Ministry of Public Works, while the sanitary engineers of the campaign, in cooperation with local authorities, are in charge of draining small swamps, standing waters and other mosquito breeding places. Ten traveling hospitals have treated serious malaria cases. Blood examinations and follow-up studies of suspected cases were made at traveling and stationary laboratories. Since there was not enough quinine available because of the war, a generous quantity of American quinacrine was procured. The use of quinacrine has reduced the number of quinine injections by unauthorized individuals. The public, knowing the bad effects that malaria has exerted on the race for centuries, has shown appreciation by giving full cooperation. The Ministry of Health has continued its program of distributing posters and pamphlets on the spread and prevention of communicable and infectious diseases, particularly malaria. Lectures accompanied with films and radio talks have also been a part of the program. Until recently malaria control work was under the direction of the Department of Hygiene of the Ministry of Health. In accordance with the new law of February 1946 an independent department under a director general has been formed for this work.

Status of Pharmacies in Turkey

Because of the existence of too many pharmacies in large cities and to raise the standards of pharmacies in the smaller townships and rural communities, a law was passed in 1927 allocating one pharmacy per 10,000 inhabitants. At that time there were 602 pharmacies in Turkey, of which 305 were in Istanbul. Today Turkey has 493 pharmacies, of which 141 are in Istanbul.

Because many communities are still without a pharmacy after almost twenty years, the Ministry of Health has taken new measures. Local authorities are to provide business premises and residencies rent free. The Turkish Society of Pharmacists will grant a credit of 5,000 to 10,000 Turkish pounds for the establishment.

Although good results have been shown in a short time as the result of these measures, pharmacies are still lacking in many communities of the Eastern provinces. In such communities proprietary medicaments are used or medicaments, vaccines and serums are supplied free of charge from government and local dispensaries at the expense of the Ministry of Health.

There remain 4 provinces and 269 countries in which the principal townships are without a pharmacy.

Istanbul University

In an address at the opening of the thirteenth academic session in September of Istanbul University the president of the university, Dr. Tevfik Saglam, pointed out the following:

Of 4,318 candidates applying for admission, 3,000 have been accepted: 600 to the School of Medicine, 600 to the School of Law, 950 to the School of Literature, 500 to the School of Science and 350 to the School of Economics.

There are at present 13,800 students, but administrative personnel and teaching staffs are adequate for only 5,000 students.

Because the government has revised salary scales for civil servants to favor candidates with higher qualifications, applications for admission to the university and other schools of higher learning have considerably increased. Four times the number of physicians are required. A great many counties are without a health officer. Hospitals are greatly understaffed. The lack of enough obstetricians, pediatricians and roentgenologists especially is felt. The fields of bacteriology and hygiene attract few undergraduates for specialization. Degrees were granted to 1,094 candidates in 1945 as follows:

	Women	Men
Medicine	57	367
Pharmacy	26	48
Dentistry	10	16
Law	47	215
Economics	5	57
Literature	93	45
Science	36	72
	274	820

New buildings for the School of Science and the School of Literature, for which the government is spending 3,000,000 pounds annually, are under construction. The Law School and the School of Economics need extensions which will require 70-80 million pounds. For this and other construction the government will give 10 million pounds each year for ten years.

Students are required to have a working knowledge of at least one foreign language, e. g. English, German or French. Of 6,652 students examined, 4,101, or 60 per cent, passed the language entrance examinations in 1945, an improvement over 43.3 per cent in the previous year.

Last year 41 assistants passed the specialist examinations at the Medical School and 18 docents and assistants were sent to the United States and England for postgraduate work. Twenty more will be sent each year. There were four translations of the thirty-five books published by the University Press. Seventeen public lectures were given. At present nearly 500 persons comprise the teaching staff of the university.

Marriages

WILLIAM WAILES MAGRUDER, Durham, N. C., to Miss Kathryn Dorsett Marley in Siler City, March 16.

WILLIAM PAYTON KOLB, Little Rock, Ark., to Miss Margaret Lucille Sparks of Asheville, N. C., March 9.

FREDERICK A. JOSTES, St. Louis, to Miss Barbara Donohoe of Menlo Park, Calif., in December.

CHESTER KOWEL JONES, Newcastle, Del., to Miss Gloria Lee of Rochester, N. Y., March 21.

JAMES FRANCIS KILDUFF to Miss Helenmarie Janice Tetzlaff, both of Cleveland, March 2.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Health Department: Validity of Compulsory Tuberculosis Examination of School Teachers.—The petitioner filed an application for an order to restrain the defendants, Board of Education of the City of New York and others, from enforcing a regulation of the city board of health requiring school teachers and other school employees to procure biennially from a physician or from the board of health a medical certificate showing freedom from active tuberculosis. The case was tried in the Supreme Court, special term, Kings County, N. Y.

Section 3 (public health) of article XVII of the New York state constitution provides that protection and promotion of the health of the inhabitants of the state are matters of public concern and provision therefor shall be made by the state and by such of its subdivisions and in such manner and by such means as the legislature shall from time to time determine. By the adoption of its charter the city of New York gave the board of health power to alter, amend or annul any part of the sanitary code and to publish additional provisions for the security of life and health in the city of New York. On Nov. 14, 1944 the board of health adopted the following regulation relating to the sanitary code:

> (a) The board, officers or other persons having charge, management or control of a school shall require biennially of all teachers and other employees who work in the school and come in contact with the children, commencing Feb. 1, 1944 and for new appointees at time of appointment, a certificate from a physician, on a form furnished by the Department of Health, certifying such teacher or other employee to be free from active tuberculosis. . . .

Pursuant to this regulation the petitioner was ordered by the board of education to appear for a chest x-ray examination or to procure the required certificate from a physician. The petitioner contended that the board of health was not empowered to enact such a regulation and that the regulation itself was arbitrary, capricious, unreasonable and unconstitutional.

The court first held that the power to regulate the public health had been properly delegated to the Board of Health of the City of New York. Further, said the court, there is no question but that the regulation in question was necessary for the protection of the public health of the people of the city. The defendant's affidavits disclosed that the contact between the teacher and the school child, often intimate, greatly increases the hazard of infection if the teacher should have an open case of pulmonary tuberculosis, that tuberculosis is not a disease that is readily apparent to the eye or easily recognizable on the basis of symptoms, and that it may exist for a long time without any outward manifestation in the victim. In the circumstances, said the court, the regulation is a reasonable exercise of the power vested in the board of health to protect the public health.

The petitioner further argued that the regulation itself is discriminatory and unconstitutional in that it applies only to school teachers and school employees. This contention also, said the court, is untenable. There is no constitutional prohibition against class legislation as such if the classification is based on some reasonable ground and is not essentially arbitrary. If the classification made by a board of health has a reasonable basis, it is a valid exercise of discretion. Having in mind the purpose of the regulation in question, the court continued, it cannot be said that the board of health acted unreasonably or arbitrarily in placing the school teacher and the school employee in a different category from the policeman, the fireman, the motorman, the street cleaner or the clerk.

Finally, the petitioner contended that the regulation invades his constitutional rights and privileges. Where, as here, the choice must be made between the individual rights of the teacher, on the one hand, and the health of school children generally, on the other, the court was of the opinion that the teacher's rights must yield to the common good. In this connection, the court pointed out, the courts of the state have consistently held that the natural right to life, liberty and the pursuit of happiness is not an absolute one but that it must yield if the sacrifice is necessary in order that organized society as a whole is to be benefited. In a prior case the appellate division held that a regulation requiring a milk dealer to submit to a blood test intended to show whether or not he had typhoid or was a carrier of typhoid germs was not harsh or unreasonable and that its object was salutary.

Accordingly the court was of the opinion that the Board of Health of the City of New York was vested with the power to adopt the regulation in question and that such regulation was a necessary and reasonable measure to promote the public health. Petitioner's application for an injunction was therefore denied. —*Conlon v. Marshall, 59 N. Y. S. (2d) 52 (N. Y., 1945).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

NATIONAL BOARD OF MEDICAL EXAMINERS EXAMINING BOARDS IN SPECIALTIES

Examinations of the National Board of Medical Examiners and the *Examining Board in Specialties were published in* The Journal, April 13, page 1048.

BOARDS OF MEDICAL EXAMINERS

Arizona:* *Examination.* Phoenix, April 2-3. *Endorsement.* Phoenix, April 6. Sec., Dr. J. H. Patterson, 826 Security Bldg., Phoenix.

Arkansas:* *Medical.* Little Rock, June 6-7. Sec., Medical Board of the Arkansas Medical Society, Dr. L. J. Kosminsky, Texarkana. *Eclectic.* Little Rock, June 6. Sec., Dr. C. H. Young, 1415 Main St., Little Rock.

District of Columbia:* *Reciprocity.* Washington, June 10. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington.

Florida:* Jacksonville, June 24-25. Sec., Dr. Harold D. Van Schaik, 2736 S.W. Seventh Ave., Miami 36.

Hawaii: Honolulu, July 8-11. Sec., Dr. S. E. Doolittle, 881 S. Hotel St., Honolulu 53.

Idaho: Boise, July 9. Dir., Bureau of Occupational Licenses, Miss Agnes Barnhart, 355 State Capitol Bldg., Boise.

Indiana: *Indianapolis, April 25-27. Sec., Board of Medical Registration* & Examination, Dr. W. C. Moore, 301 State House, Indianapolis 4.

Maine: Augusta, July 2-3. Sec., Board of Registration of Medicine, Dr. Adam P. Leighton, 192 State St., Portland.

Maryland: *Homeopathic.* Baltimore, June 18-19. Sec., Dr. J. A. Evans, 612 W. 40th St., Baltimore. *Medical.* Baltimore, Dec. 10-13. Sec., Dr. J. T. O'Mara, 1215 Cathedral St., Baltimore.

Mississippi: June. Asst. Sec., State Board of Health, Dr. R. N. Whitfield, Jackson 113.

Nevada: Carson City, May 6. Sec., Dr. G. H. Ross, 215 N. Carson St., Carson City.

New Jersey: Trenton, June 18-19. Sec., Dr. E. S. Hallinger, 28 W. State St., Trenton.

New York: Albany, Buffalo, New York and Syracuse, June 24-27. Sec., Dr. Jacob L. Lochner, Education Bldg., Albany.

North Carolina: *Reciprocity.* Pinehurst, May 1. Act. Sec., Mrs. L. McNeill, 226 Hillsboro St., Raleigh.

North Dakota: Grand Forks, July 2-5. Sec., Dr. G. M. Williamson, 4½ S. Third St., Grand Forks.

Ohio: *Endorsement.* May 7. Sec., State Medical Board, Dr. H. M. Platter, 21 W. Broad St., Columbus.

Oregon:* *Endorsement.* Portland, April 27. Special Examination May 22-24. Final date for filing application is May 8. *Examination.* Portland, July 24-26. Exec. Sec., Miss Lorienne M. Conlee, 608 Failing Bldg., Portland 4.

Pennsylvania: Philadelphia and Pittsburgh, April. Act. Sec., Bureau of Professional Licensing, *Department of Public Instruction,* Mrs. M. G. Steiner, 351 Education Building, Harrisburg.

South Carolina: Columbia, June 24-26. Sec., Dr. N. B. Heyward, 1329 Blanding St., Columbia.

South Dakota:* Pierre, July 16-17. Sec., Medical Licensure, State Board of Health, Dr. Gilbert Cottam, Capitol Bldg., Pierre.

Texas: Dallas, June 11-13. Sec., Dr. T. J. Crowe, 918-20 Texas Bank Bldg., Dallas 2.

Vermont: Burlington, April 15-16. Sec., Dr. F. J. Lawliss, Richford.

Washington:* Seattle, July 11-12. Sec., Department of Licenses, Miss Nell Adams, Olympia.

Wisconsin:* June 25-27. Sec., Dr. C. A. Dawson, River Falls.

Wyoming: Cheyenne, June 3-4. Sec., Dr. G. M. Anderson, Cheyenne.

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* Basic Science Certificate required.

BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Arkansas: Little Rock, May 1. Sec., Mr. L. E. Gebauer, 701 Main St., Little Rock.

Colorado: Denver, June 5-6. Sec., Dr. Esther B. Starks, 1459 Ogden St., Denver.

District of Columbia: Washington, April 22-23. Sec., Commission on Licensure, Dr. G. C. Ruhland, 6150 E. Municipal Bldg., Washington 1.

Florida: Gainesville, June 4. Final date for filing application is May 20. Sec. Dr. J. F. Conn, John B. Stetson University, DeLand.

Michigan: Ann Arbor and Detroit, May 10-11. Sec., Miss Eloise LeBeau, 101 N. Walnut St., Lansing.

Nebraska: Omaha, May 7-8. Dir., Bureau of Examining Boards, Mr. Oscar F. Humble, 1009 State Capitol Bldg., Lincoln 9.

Oregon: Portland, July 6. Sec., Mr. C. D. Byrne, Univ. of Oregon, Eugene.

South Dakota: Probably Aberdeen, June 7-8. Sec., Dr. G. M. Evans, Yankton.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days. Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them.

Titles marked with an asterisk (*) are abstracted below.

American Heart Journal, St. Louis

30:539-648 (Dec.) 1945

Effect of Smoking Cigarets on Peripheral Blood Flow in Subjects in Older Age Group with Coronary Arteriosclerosis and Hypertension. H. J. Stewart, Helen S. Haskell and H. Brown.—p. 541.
Electrocardiographic Changes in Early Syphilis Prior to and on Completion of Intensive Arsenotherapy. S. D. Klotz and R. H. Crede. —p. 551.
Studies Concerning the Etiology and Pathogenesis of Neurocirculatory Asthenia: IV. Respiratory Manifestations of Neurocirculatory Asthenia. M. Friedman.—p. 557.
*Cardiac Aneurysm with Spontaneous Rupture: Report of 2 Cases. W. F. Betsch.—p. 567.
Relative Incidence of Rheumatic Valve Disease in New York and Costa Rica and Its Bearing on Rheumatic Origin of Calcareous Aortic Stenosis. S. L. Wilens, J. M. Pearce and M. F. Diaz.—p. 573.
Electrocardiogram in Pneumoperitoneum. A. J. Benatt and W. F. Berg. —p. 579.
Relation of Age and Other Factors to Cardiac Subendothelial Hemorrhage in Dogs. M. B. Visscher and A. Henschel.—p. 592.
Angina Pectoris, with Particular Reference to Its Occurrence Before and After Myocardial Infarction. D. Pazzanese and O. Montenegro. —p. 599.
Facts and Fallacies About Normal Apex Beat. F. W. Niehaus and W. D. Wright.—p. 604.
Contusion of Heart: Case Report. L. K. Reed and K. E. Berger. —p. 622.

Cardiac Aneurysm with Spontaneous Rupture.—Spontaneous rupture occurred in 2 of 11 cases of cardiac aneurysm seen by Betsch. If the rupture is delayed, giving the aneurysm ample time to develop, it will have a wall of well organized connective tissue. Muscle fibers will be practically extinct. On the other hand, if the rupture occurs while the aneurysm is developing from an area of fresh myocardial infarction the wall of the aneurysm at the time of death will be composed largely of necrotic muscle cells with little fibrous tissue and organization. It seems logical that aneurysmal development occurs during the period of myocardial necrosis and softening, which is most manifest during the first two weeks after the coronary occlusion. The clinician's interest in cardiac ventricular aneurysm is on antemortem diagnosis, in which the significant features are (*a*) a history of a previous coronary occlusion, (*b*) failure to observe the approved period of rest in bed after a myocardial infarction, (*c*) a forceful and diffuse cardiac thrust, most evident within or outside the midclavicular line, usually at the level of the fifth rib, and (*d*) a weak and feeble first sound at the apex. Radiologic examination has become the most important aid in diagnosis. Roentgenograms should be made in the anteroposterior and oblique positions and check by fluoroscopy. A sharply defined, localized bulge and a paradoxical pulsation, i. e. expansion of the sac during systole and a decrease in its size during diastole, are pathognomonic. Ventricular aneurysm is not infrequently compatible with one or two years of moderately active life.

American J. Digestive Diseases, Fort Wayne, Ind.

13:1-32 (Jan.) 1946

Management of Chronic Constipation. M. H. Streicher.—p. 1.
Modern Concept of Congenital Megacolon (Hirschsprung's Disease). E. Muehsam.—p. 3.
Some Dermatologic Aspects of Allergy. J. A. Turnbull.—p. 9.
Diverticula of Colon versus Gallstones. A. Galambos and Wilma Mittelmann-Galambos.—p. 14.
Gastric Carcinoma: Review of Errors in Diagnosis. M. Golob.—p. 17.
Clinical Evaluation of Laboratory Tests of Stomach. R. Ehrmann. —p. 23.
Heredity an Important Factor for Early Diagnosis of Gastrointestinal Cancer. R. Ehrmann.—p. 25.

American Journal of Diseases of Children, Chicago

70:263-412 (Nov.-Dec.) 1945

Evaluation of Effectiveness of Therapeutic Measures Against Primary Tuberculosis: Consideration of Some Leading Principles. A. Wallgren. —p. 263.
Galactosemia in Infant with Cataracts: Clinical Observations and Carbohydrate Studies. E. Bruck and S. Rapoport.—p. 267.
Precordial Leads in Childhood: Comment on Presence of Double Upward Deflections in Leads from Sternal Region of Normal Children. R. Ash. —p. 277.
Trichuriasis in Children: Clinical Survey of 50 Cases and Reports of 3 Cases with Heavy Infection and Striking Clinical Symptoms. L. Whittier, N. H. Einhorn and J. F. Miller.—p. 289.
*Isolation of Poliomyelitis Virus from Creek Water by Direct Transmission to Cotton Rat. J. A. Toomey, W. S. Takacs and H. M. Weaver.—p. 293.
Vitamin Content of Field-Frozen Kale. A. D. Holmes, Beula V. McKey, Katherine O. Esselen, L. V. Crowley and C. P. Jones.—p. 298.
Congenital Defects Following Maternal Rubella. W. R. Conte, C. S. McCammon and A. Christie.—p. 301.
Treatment of Diabetic Child, with Particular Reference to Use of Globin Insulin. R. L. Jackson and C. B. McIntosh.—p. 307.
Causes of Prematurity: IV. Influence of Maternal Illness on Incidence of Prematurity; Employment of New Criterion of Prematurity for Negro Race. Estelle W. Brown, R. A. Lyon and Nina A. Anderson. —p. 314.
Id.: V. Influence of Syphilis on Incidence of Prematurity. Estelle W. Brown, R. A. Lyon and Nina A. Anderson.—p. 318.
Cholecystography for Children. V. E. Hrdlicka, C. G. Watkins and J. A. Robb.—p. 325.
Rheumatic Fever Problem: I. Present Status. A. F. Coburn.—p. 339.
Id.: II. Approaches Awaiting Development. A. F. Coburn.—p. 348.

Isolation of Poliomyelitis Virus from Creek Water.—Toomey and his associates report that an outbreak of poliomyelitis occurred last year in Perrysburg, Ohio. Several patients who became ill lived near a creek, had been wading in the creek and several of them had had gastrointestinal upsets before the epidemic. Experiments were performed to determine whether the water in the creek was infected with the virus of poliomyelitis and, if so, whether the virus could be transmitted directly to the cotton rat. A strain of virus probably belonging to the poliomyelitis group was isolated from the creek water by direct transmission to the cotton rat. Four series of transfers were tried before it was certain that the material produced paralysis. Therefore a virus may be present and still not produce paralysis in the cotton rat even after a few transfer injections. An animal may die without showing any demonstrable evidence of paralysis and yet have virus present in its central nervous system. The authors were not able to isolate virus from the creek as it entered or left the town, but they were successful at a point halfway between. The spot from which it was isolated was near an outlet which may have been used for overflow drainage from septic tanks. The latter may have been inefficient and have allowed virus to pass into the water. Feces should be efficiently treated before disposal into an open body of water.

Arkansas Medical Society Journal, Fort Smith

42:155-172 (Jan.) 1946

The Liver. L. McMillin.—p. 155.
Tachycardia and Its Treatment: Part 1. P. D. White.—p. 157.
Responsibility of Private Physician in Tuberculosis Control. H. E. Hilleboe.—p. 160.

42:173-194 (Feb.) 1946

The Returning Injured Soldier. H. H. Buckelew.—p. 173.
Venereal Disease. Arkansas State Board of Health.—p. 176.
Latest Treatment of Malaria. W. D. English.—p. 178.

Gastroenterology, Baltimore

5:345-448 (Nov.) 1945

Silent Gallstones. H. E. Robertson.—p. 345.
Eosinophilia on Gastrointestinal Hospital Service: Case Reports on 4 Patients with Syndrome of Eosinophilia, Leukocytosis and Gastrointestinal Complaints. R. C. Page.—p. 373.
Review of Gastroenterologic Roentgenologic Literature for Year 1943. B. H. Ward and B. R. Kirklin.—p. 387.
Nutrition in the Aged. J. Meyer, Harriet Sorter and H. Necheles. —p. 398.
Enterogastrone, Anthelone and Urogastrone: Review of Literature and Suggestion for Organization of National Committee for Study of "Peptic" Ulcer. D. J. Sandweiss.—p. 404.
Is Bile and Pancreatic Juice a Factor in Genesis of Ulcerative Colitis? Experimental Study. J. H. Ivy and B. G. Clarke.—p. 416.
On Physiology of Volatile Fatty Acids. J. F. McClendon and J. Scott. —p. 418.

Journal of Experimental Medicine, New York

83:89-164 (Feb) 1946

Studies on Chemical Nature of Substance Inducing Transformation of Pneumococcal Types: II. Effect of Desoxyribonuclease on Biologic Activity of Transforming Substance. M. McCarty and O. T. Avery.—p. 89.
Id.: III. Improved Method for Isolation of Transforming Substances and Its Application to Pneumococcus Types II, III and VI. M. McCarty and O. T. Avery.—p. 97.
Studies on Pneumonia Virus of Mice (PVM). Hemagglutination by Virus; Occurrence of Combination Between Virus and Tissue Substance. E. C. Curnen and F. L. Horsfall Jr.—p. 105.
Studies on Scrub Typhus: Soluble Antigen in Tissues and Body Fluids of Infected Mice and Rats. J. E. Smadel, F. L. Rights and Elizabeth B. Jackson.—p. 133.
Formation of Serologically Reactive Dextrans by Streptococci from Subacute Bacterial Endocarditis. E. J. Hehre and J. M. Neill.—p. 147.

Journal of Investigative Dermatology, Baltimore

6:323-368 (Dec) 1945

New Technic for Performing Quantitative Contact (Patch) Skin Tests. J. E. Dunn, H. S. Mason and Barbara S. Smith.—p. 323.
Simple Puncture with Needle as Aid in Diagnosis of Hypochromic and Achromic Macules of Leprosy. L. Marino Bechelli.—p. 337.
Studies in Hypersensitivity to Light. I. Preliminary Report. Marion B. Sulzberger and R. L. Baer.—p. 345.
So-Called "Pustular Psoriasis." W. Sachs and F. Scannone.—p. 349.
Direct Current Combined with X-Ray Therapy: Erythema Studies: Preliminary Experiments. H. Sigel.—p. 355.

Journal of Pediatrics, St. Louis

28:1-116 (Jan) 1946

Epidemic Poliomyelitis. L. P. Gebhardt and W. M. McKay.—p. 1.
Resistance of Cotton Rats to Virus of Poliomyelitis as Affected by Intake of Vitamin A, Partial Inanition and Sex. H. M. Weaver.—p. 14.
*Use of Sulfamerazine in Infants and Children. G. B. Forbes, Anne Perley and Jean Dehlinger.—p. 24.
Prevention of Edema in Infants Undergoing Sulfonamide Treatment. R. Klein.—p. 37.
Incidence of Reactions to Sulfonamide Drugs in Infants and Children. H. W. Fink and C. A. Smith.—p. 40.
Tables for Predicting Adult Height from Skeletal Age and Present Height. Nancy Bayley.—p. 49.
Use of Prostigmine in Management of Infantile Cerebral Paralysis. P. N. Jepson.—p. 65.
Cord Transfusions in Newborn Infants. Report of 99 Cord Transfusions in Premature Babies, 21 in Full-Term Babies and 78 in Babies of Rh Negative Mothers. H. W. Mayes.—p. 69.
Anti-Rh Agglutinins in Maternal Blood Without Symptoms of Hemolytic Anemia in Newborn Infant. A. Goldbloom and H. Lubinski.—p. 83.
Epidemic Meningitis and Meningococcemia Treated with Penicillin. R. C. Lohrey and J. A. Toomey.—p. 86.
Use of Amino Acids in Case of Severe Salmonella Schottmuelleri (Paratyphoid B) Infection in Infant. I. Seidemann.—p. 90.
Acute Gastric Ulcer with Perforation in One of Premature Twins: Report of Case. A. A. Rosenberg and Mary H. Heath.—p. 93.
Paroxysmal Tachycardia: Report of 2 Cases in Infants. E. P. Scott and Margaret A. Limper.—p. 96.
Leiner's Disease Followed by Celiac Syndrome: Case Report. H. E. Thelander.—p. 101.

Sulfamerazine in Infants and Children.—Forbes and his associates treated with sulfamerazine 135 unselected hospitalized infants and children with various types of infections from December 1943 to June 1944. Adequate blood concentrations were attained with the oral administration of 0.05 Gm. per kilogram of body weight every eight hours (three fourths of the total daily dosage usually employed with sulfathiazole and sulfadiazine). Sulfamerazine thus possesses an advantage over the other sulfonamide drugs in that the latter must be given in large total dosage with more frequent doses to attain comparable blood levels. High blood concentrations were easily and rapidly produced by the subcutaneous administration of sodium sulfamerazine. Forty cc. and 60 cc. of 0.5 per cent solution per kilogram were adequate in patients with severe infections. The absorption of sulfamerazine from the gastrointestinal tract, although more rapid and complete than the absorption of other sulfonamide drugs, did not lead to values sufficiently high to obviate the need for parenteral administration of the drug when high values were desired. Sulfamerazine was observed to pass into the spinal fluid to the extent of from 52 to 83 per cent of the whole blood value and 41 to 73 per cent of the plasma value, while the concentration in pleural and ascitic fluid equaled that in the plasma. From a purely clinical evaluation the therapeutic effectiveness of sulfamerazine is entirely comparable to that of sulfapyrazine, sulfadiazine and sulfathiazole. The toxic reactions encountered were relatively frequent but for the most part were mild, and no serious reactions occurred. All the patients were given sodium lactate in an attempt to keep the urine alkaline, but microscopic hematuria occurred frequently. The frequency of toxic reactions was definitely greater with sulfamerazine than with sulfapyrazine and certainly as great as with sulfadiazine.

Kentucky Medical Journal, Bowling Green

44:1-88 (Jan) 1946

Minutes of Ninety-Fifth Annual Scientific Session of the Kentucky State Medical Association Held at Lexington, October 29-31, 1945.—p. 4.

44:89-114 (Feb) 1946

Chest Injuries. J. Duffy Hancock.—p. 91.
Acute Infectious Hepatitis. A. C. McCarty.—p. 95.
Recent Trends in Orthopedic Surgery. W. McDaniel Ewing.—p. 101.
Undulant Fever. R. Hayes Davis.—p. 103.
Varicose Veins. L. Lukins.—p. 105.

Minnesota Medicine, St. Paul

29:1-96 (Jan) 1946

What Public Health Expects of Private Physician. H. Emerson.—p. 33.
Problem of Medicine in Rural Health. L. W. Larson.—p. 38.
Relocation of Physicians in Iowa. J. C. Parsons.—p. 42.
Lumbar Sympathetic Block and That Postphlebitic Leg. H. O. McPheeters.—p. 43.
Medical Experiences at Dachau. J. A. Killins and J. L. Posch.—p. 46.

Nebraska State Medical Journal, Lincoln

31:41-80 (Feb) 1946

Review of Sedation. H. F. Gerald.—p. 45.
Sodium Citrate Therapy in Lead Encephalopathy: Case Report in Infant. J. L. Gedgoud.—p. 48.
Emergencies of Neonatal Period. H. M. Jahr.—p. 51.
Fifty Years of Radiology: From Roentgen to Era of Atomic Power. R. S. Stone.—p. 56.

New England Journal of Medicine, Boston

234:37-70 (Jan 10) 1946

Hodgkin's Disease: VI. Clinical Diagnosis. H. Jackson Jr. and F. Parker Jr.—p. 37.
Mental Breaking Points. J. B. Dynes.—p. 42.
*Incidence of Leukemia in Radiologists. H. Ulrich.—p. 45.
Ice Cream as Source of Riboflavin, Carotene and Ascorbic Acid. A. D. Holmes, J. W. Kuzmeski and F. T. Canavan.—p. 47.
Sporotrichosis: Report of Case. S. C. Ho and P. E. Smith.—p. 50.
Problems in Distribution of Medical Care. D. A. Clark.—p. 53.
(Nephrolithiasis) Normal Parathyroid Glands.—p. 59.
Malignant Lymphoma, Hodgkin's Sarcoma Type, Involving Cervical and Retroperitoneal Lymph Nodes, Spleen and Bone Marrow.—p. 62.

Incidence of Leukemia in Radiologists.—A study of 34,626 obituary notices in The Journal covering the ten year period from 1935 to 1944 reveals that the incidence of leukemia among 205 physicians listed as radiologists was 3.9 per cent, which is more than eight times as great as the incidence (0.44 per cent) among those not listed as radiologists. This statistical study indicates that exposure to radiation is a potential cause of leukemia. Ulrich cites the experience of a dermatologist aged 51 who for several years failed to take precautions against exposure to radiation that he used for treating his patients. He developed lymphatic leukemia and died nine months after onset of symptoms. This case was omitted from the group of 8 cases of leukemia occurring in radiologists, because the notice of this patient's death gave no indication that he had been exposed to radiation. Inclusion of this case in the radiologic group would increase the percentage of leukemic deaths to 4.3, and the percentage in the nonradiologic group, in which his case was included, would be slightly lower, thus accentuating the difference between them.

Public Health Reports, Washington, D. C.

61:69-96 (Jan. 18) 1946

Epidemic of Severe Pneumonitis in Bayou Region of Louisiana: Comparative Study of Viruses of Lymphogranuloma Venereum, Psittacosis and Louisiana Pneumonitis. C. L. Larson and B. J. Olson.—p. 69.
Tularemia: Attempted Transmission by Each of Two Species of Fleas: Xenopsylla Cheopis (Roths.) and Diamanus Montanus (Baker). F. M. Prince and M. C. McMahon.—p. 79.

61:97-128 (Jan. 25) 1946

Physical Impairments of Members of Low Income Farm Families—11,490 Persons in 2,477 Farm Security Administration Borrower Families, 1940: VI. Extent of Immunization Against Smallpox, Diphtheria and Typhoid Fever. Mary Gover and J. B. Yaukey.—p. 97.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

1:39-76 (Jan. 12) 1946

Contribution of Anatomy to War. W. E. Le Gros Clark.—p. 39.
Synthetic Substitutes for Quinidine. G. S. Dawes.—p. 43.
Poisoning by Amanita Phalloides. J. Dubash and D. Teare.—p. 45.
Solubility of Sulfonamides in Relation to Hydrogen Ion Concentration. H. A. Krebs and J. C. Speakman.—p. 47.
*Penicillin Cream of Low Concentration. G. H. du Boulay.—p. 50.

Penicillin Cream of Low Concentration.—Boulay employed penicillin cream containing 200 units of penicillin per cubic centimeter in the treatment of 39 cases of staphylococcic and streptococcic infections of the skin. The cases included 20 of impetigo, 5 of sycosis barbae, 10 in which infection was superimposed on previous disease or trauma, 2 of external otitis and 2 of retroanal intertrigo. When impetigo is caused by a penicillin sensitive organism and has not been present for more than five weeks, it will heal in from three days to two weeks, usually nearer a week. To avoid recurrences, treatment should be continued in all cases, regardless of the length of the history, until no mark remains on the skin. In chronic cases of sycosis barbae and in the few caused by resistant strains this cream may fail to clear up the disease. There was no evidence of a sensitive strain becoming resistant during treatment.

Journal Obst. & Gynaec. of Brit. Empire, Manchester

52:545-624 (Dec.) 1945

Relation of Theca Cells to Disturbances of Menstrual Cycle. A. Culiner.—p. 545.
Blood Pressure of Relatives of Patients with Toxemia of Late Pregnancy: Preliminary Note. Josephine Barnes and F. J. Browne.—p. 559.
*Prevention of Premature Labor. W. Shute and E. Shute.—p. 570.
Carcinoma Corporis Uteri in 2 Sisters Aged 34 and 32 Years. A. W. Purdie.—p. 575.
Rupture of Rectus Abdominis Muscle During Pregnancy. R. C. Thomas.—p. 580.
*Myasthenia Gravis and Pregnancy. A. Wilson and S. J. Barr.—p. 584.
Notes on Treatment of Vesicovaginal Fistula. W. R. Mackenzie.—p. 589.

Prevention of Premature Labor.—Sixty-three cases of threatened premature labor have been reviewed by the Shutes. Of these 73 per cent were salvaged. Of those in which estrogen determinations were made, 87 showed a high blood estrogen even early in pregnancy. The only therapy used was vitamin E, with or without temporary rest in bed. The importance of using a vitamin E preparation of reliable potency, both in adequate dosage and until term, is emphasized again. Of 109 patients 6 monsters were delivered (only 1, with a cleft palate, surviving over three months) and 92 normal infants.

Myasthenia Gravis and Pregnancy.—Wilson and Barr observed the course of pregnancy in a woman aged 28 who had had myasthenia gravis for eighteen months. The authors conclude that there was no indication that pregnancy, labor or nursing adversely affects the course of myasthenia gravis in a patient treated with neostigmine and ephedrine.

New Zealand Medical Journal, Wellington

44:295-348 (Dec.) 1945

Current Thoughts on Carcinoma of Rectum. D. Robb.—p. 296.
Progress in Knowledge of Hydatid Disease. L. Barnett.—p. 304.
*Feeding of School Children with Health Dinner: Report of Experiment. Grace Stevenson.—p. 309.
Incidence in New Zealand of Pulmonary Tuberculosis in Pregnant Women. J. B. Dawson.—p. 312.
Calcification of Left Auricle: Report of Case. A. C. Begg.—p. 315.
Eosinophilic Granuloma of Bone: Report of Case. J. O. Mercer.—p. 320.
Incidence and Diagnosis of Amebic Dysentery in the Second New Zealand Expeditionary Force. D. H. Adamson.—p. 323.
Arthritis Complicating Meningococcal Meningitis. G. L. Brinkman.—p. 327.

Health Dinner for School Children.—Stevenson has reported a study of the supplementary feeding of school children attending the Open Air School at Caversham, Dunedin, with a health dinner consisting of milk ⅔ pint, wholemeal bread 3 ounces, butter ¾ ounce, cheese 1½ ounces, various salads, a rusk and an orange or an apple. The author observed a significant increase in the height and the weight of the health dinner children as compared to a control group eating an ordinary hot cooked meal at home.

Acta Radiologica, Stockholm

26:491-605 (Nov. 30) 1945. *Partial Index*

Rare Anomaly in Elbow—Patella Cubiti. P. M. Kjelland.—p. 491.
*Attempt at Roentgenologic Visualization of Coronary Blood Vessels in Man. S. Radner.—p. 497.
Chances of Roentgen Therapy for Treatment of Cancer of Breast. S. Mustakallio.—p. 503.
Roentgen Picture of Tabetic Arthropathies and Disorders of Bones. P. F. Møller.—p. 535.
*Necrosis of Renal Papillae Following Retrograde Pyelography. V. Eskelund.—p. 548.
Radiosurgery of Tumor Metastases in Lymph Glands of Neck. R. B. Engelstad.—p. 555.
Treatment of Tumors of Urinary Bladder. R. Weyde.—p. 589.

Roentgenologic Visualization of Coronary Blood Vessels.—Puncture of the aorta, with thorotrast as the contrast medium, was carried out by Radner in 5 cases. First roentgenoscopy of the topography of the ascending aorta was made in each case with the patient in the sitting position. Perforation through the sternum with the apparatus commonly used for sternal puncture was carried out under local anesthesia with the patient in the recumbent position. Roentgenoscopic control of the position of the cannula point was performed with the patient seated. After removal of the plunger in the apparatus to be used for injection a needle having an outside diameter of 1.5 mm. was inserted through the cannula, with the patient sitting in a comfortable position. The needle passed readily to the ascending aorta. Twenty to 30 cc. of the contrast medium was injected as rapidly as possible. During the injection a number of x-ray films were exposed. The average duration of exposure was 0.06 second. After the conclusion of the exposures the patient remained in the recumbent position for one hour. Fluoroscopy of the thorax was then done. With this method moderate opacification of the bulb of the aorta was obtained. Faint outlines of vessels which correspond to the proximal parts of the coronary arteries were seen in the area where these vessels are normally situated. Transient complications consisted in a moderate degree of mediastinal emphysema and of extravascular infiltration.

Necrosis of Renal Papillae Following Retrograde Pyelography.—Eskelund reports a case of pyelonephritis in a woman aged 55. On admission to the hospital the patient suffered from pyuria but the renal function was fairly good. In the course of one month the patient received 22 Gm. of 2(p-aminobenzenesulfonamide)methylthiodiazole and 50 Gm. of 2(p-α-sodium ethane sulfonate aminobenzenesulfonamide)thiazole. When the treatment was discontinued the patient was suburemic with albuminuria and a daily output of 500 to 800 cc. of urine. Retrograde pyelography was performed and a 25 per cent solution of sodium orthoiodine hippurate was used for the contrast medium. The intervention was followed by rise in temperature to 102.2 F., where it remained for about one week. The temperature fell and the condition of the patient grew worse until she died in a state of uremia one month after the pyelography. The postmortem examination revealed bilateral necrosis of the renal papillae; in certain places the necrotic portions were almost detached from the base. In addition the usual signs of acute and chronic pyelonephritis were present and the renal tissue was sprinkled with a number of "microliths." The kidneys on the whole did not exhibit changes which could be definitely attributed to the sulfathiazole treatment. Neither the acute nor the chronic pyelonephritis can have been the direct cause of the necrosis. The clinical course as well as the fact that the lesion was bilateral and localized to the papillae suggest that the necrosis was caused by the pyelography. In the presence of a reduced output of urine and general impairment of the renal function the intervention itself presumably may entail a temporary reflex anuria. In case some of the contrast medium has escaped into the papillary ductules an obstruction may result by epithelial necrosis and the accumulation of desquamated cells. If the secretory pressure is reduced, the action is prolonged and the harmful effect increased.

Book Notices

Roentgen Diagnosis of Diseases of the Gastrointestinal Tract. By John T. Farrell Jr., M.D., Clinical Professor of Radiology, Graduate School of Medicine, University of Pennsylvania, Philadelphia. Fabrikoid. Price, $5.50. Pp. 271, with 190 illustrations. Springfield, Illinois: Charles C Thomas, 1946.

Roentgen examinations are an integral part of the satisfactory examination of patients, particularly when gastrointestinal complaints are encountered. Therefore a practical manual that offers assistance to the general practitioner and the medical student is always welcomed. Many of the needs are met in this small, readable and well illustrated volume on the common diseases of the gastrointestinal tract. An introductory chapter on the general features of a roentgen examination of the alimentary tract is replete with sound advice drawn from the author's long experience in the field. Suggestions that will aid in the clarification of defects of the gastrointestinal tract are given, while uncertain and unreliable methods are dismissed with the simple explanation that they have not proved of value in the author's experience. There are separate chapters on the examination and roentgen findings of diseases of the esophagus, stomach, small intestine, colon, appendix, rectum, anus and combined lesions of the stomach and intestine. Illustrative roentgenograms from the author's files are on the whole exceptionally clear and well chosen. Those taken from other sources are good examples of definite pathologic changes and are properly described and acknowledged. The text is a clear and remarkably complete discussion of disease entities in brief and concise terms. In keeping with modern practice, the Standard Nomenclature of Disease, edited by Dr. Edwin P. Jordan and published by the American Medical Association, is followed closely. Wherever there are exceptions in the book to the order of the listing of diseases in the Standard Nomenclature there are appropriate remarks and footnotes indicating the deviation.

Carcinoma and other malignant tumors of the gastrointestinal tract are briefly reviewed. The sections devoted to gastric and duodenal ulcer are too scanty and could be enlarged even in so small a manual. Summaries at the end of each chapter would seem to be unnecessary recapitulations in this short work, although the summaries were probably of real teaching value to the author in his classes. In place of summaries the space could be used with profit for a longer discussion of diverticula, regional ileitis and ulcerations of the stomach, duodenum and large bowel. All are agreed that fluoroscopy is an important feature of a roentgen examination, and it should be illustrated in the text. All the plates are roentgenograms, whereas a few fluoroscopic views would have been helpful to the student and practitioner in his understanding of gastrointestinal diseases. In spite of minor defects the manual is a sound, well balanced and carefully illustrated guide to clinical roentgenology. A brief, orderly exposition of each disease or defect and a satisfactory index enhance the book's value. It is a manual that should be helpful to both the general practitioner and the medical student.

Les mastoïdites. Par Georges Portmann, Professeur de Clinique oto-rhino-laryngologique à l'Université de Bordeaux, Bordeaux, Jean Despons, Professeur agrégé à la Faculté de médecine de Bordeaux, et Max Berger, oto-rhino-laryngologiste des Hôpitaux de Bordeaux. Paper. Price, 520 francs. Pp. 504, with 155 illustrations. Paris: Masson et Cie, 1945.

For many years Portmann has been to Bordeaux what Politzer was to Vienna, with the difference that the former stresses surgery while the latter stressed medication and general management first and surgery second. This book is therefore a treatise on surgery of the temporal bone and of the infections which invade it and produce "complications" elsewhere. It is complete in every detail and is of special value in the clarity and thoroughness of chapter I, which deals with the embryologic and intrauterine development of the temporal bone, including "pneumatization." Several pages are given over to a thorough study of the anatomy of each portion of the bone, petrous, squamous and "tympanal." Chapter V deals with all the various forms of mastoiditis and the symptoms of the "mastoid syndrome." A special chapter (VI) is devoted to the squamozygomatic cells, which the author calls "the paramastoid." Petrositis comes in for detailed study, including the various methods of surgical approach. No mention is made, however, of the extensive writings of Kopetzky, Almour or Eagleton, although the latter's name is found now and then. Chapter VIII is devoted to "complications" in the sinuses (lateral), jugular, labyrinth, cerebrum, cerebellum and meninges. It is detailed and exact. Strange to say, the word "penicillin" is not to be found, and the sulfonamide drugs are mentioned more or less casually, with due caution as to their banal effect on kidneys or blood vascular system. As in other French textbooks in general, the style is vigorous, interesting and compelling. The text flows along freely and makes for easy reading. However, in the light of recent medication (penicillin) surgery is somewhat in the shadow these days, but it will, of course, never be "liquidated."

Diseases of the Breast: Diagnosis, Pathology, Treatment. By Charles F. Geschickter, M.A., M.D., Lieut. Commander, Medical Corps, United States Naval Reserve. With a Special Section on Treatment in collaboration with Murray M. Copeland, A.B., M.D., F.A.C.S., Instructor in Surgery, Johns Hopkins Medical School, Baltimore, Maryland. Second edition. Fabrikoid. Price, $12. Pp. 826, with 593 illustrations. Philadelphia, London & Montreal: J. B. Lippincott Company, 1945.

This book on diseases of the breast, the first edition of which appeared in 1943, gives a thorough account of etiology, diagnosis and treatment. The author's aim has been to make the treatise useful to the general practitioner as well as to the specialist. The first part deals with the development and physiology of the breast, methods of examination and diagnosis. The second part contains discussions of the breast in pregnancy and lactation. In the third part is discussed chronic cystic mastitis and in the fourth part benign tumors. Part five is devoted to malignant tumors, part six to treatment and part seven to the experimental production of mammary tumors. This edition contains a number of revisions and some additions; some new illustrations have been added and the bibliography has been brought up to date. The book contains much useful information, but on the whole the presentation is uncritical and still contains many dogmatic statements on various complex problems relating to tumors of the breast and allied conditions.

Die intravitale Knochenmarksuntersuchung: Die Hämatologie im Lichte der Sternalpunktion. Von Dr. Med. Stefan J. Leitner. Cloth. Price, 36 Swiss francs. Pp. 386, with 214 illustrations. Basel: Benno Schwabe & Co., 1945.

The Swiss author has to his credit a long series of publications (thirty-two are listed in the bibliography) on various aspects of hematology, the majority on sternal puncture, and on blood in tuberculosis. The monograph is the outgrowth of one published in 1941 in *Folia haematologica*, enlarged and brought up to date. The whole field of hematology, especially the diagnostic, morphologic and histogenetic aspects, are analyzed on the basis of careful study of marrow obtained in 2,000 sternal punctures from 700 patients. There is a relatively brief (sixty-four pages) general part with chapters on technic of sternal puncture, quantitative and qualitative (morphologic) findings, maturation of marrow elements, evaluation of mitoses and therapeutic use of sternal puncture. The large special part covers diseases of erythropoiesis, including anemias and erythremias and diseases of leukopoiesis, of thrombopoiesis and of marrow reticulum. Diagnosis of metastatic cancer by means of sternal puncture was made by Leitner in 10 per cent of his series. Separate chapters are devoted to findings in marrow preparations, in diseases of the liver and of endocrine glands, to changes due to radiation and to such special problems as culture of marrow for diagnosis of infectious diseases, metabolic studies and tissue culture. The fifty-two page bibliography seems complete and should prove valuable. Thorough knowledge of the subject is apparent in every chapter. The treatment is objective and critical, and the author's own opinion is stated in no uncertain terms. Well chosen case reports are used to good advantage. Each subject is summarized succinctly in italicized paragraphs. The black and white photomicrographs are instructive but unfortunately of very uneven quality. This is the only imperfection in a book which is the most complete to date available treatise of the subject. Hematologists and clinical pathologists who read German will find here a wealth of information.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

ORAL ADMINISTRATION OF WATER POSTOPERATIVELY

To the Editor:—What is the proper time to permit the administration of water by mouth following operations, particularly those on abdominal organs? Does water, so administered, have any harmful effects particularly with regard to the development of undue peristaltic and paralytic action on the stomach and intestines?

M.D., Illinois.

ANSWER.—No universal rule can be used to determine when the oral administration of water should be started postoperatively.

A. In cases in which the gastrointestinal tract has not been entered surgically the usual instruction to allow sips of warm water one or two hours after the postanesthetic nausea has disappeared is rational. However, if nausea is present the administration of water is likely to aggravate the condition.

The physiologic rationale of such instruction is that after an anesthetic or pain or bouts of vomiting the stomach is atonic and amotile and the mucosa is congested. The vomiting center is hyperirritable to reflex stimulation. The presence of nausea is the best symptom indicating that the stomach and vomiting center are in an abnormal state and that it will not require much of a stimulus to cause vomiting, after which the stomach and intestine are further inhibited and air is likely to be swallowed or aspirated. Even after nausea has disappeared the nausea and vomiting mechanism are hyperirritable for a time. During this stage of subsymptomatic irritability of the vomiting center large amounts of water or fluid will serve as a stimulus or produce nausea and vomiting, but small amounts at body temperature are less likely to do so. However, if the small amounts ingested are retained and accumulate in the stomach, nausea and vomiting usually recur. The time after operation at which it is most suitable to begin water orally will vary with different patients because of the variation in the susceptibility of the nausea and vomiting mechanisms to irritation. If nausea and vomiting have been present prior to the operation, or if the patient gives a history of an easily upset stomach, a longer time than one or two hours may have to elapse before the hyperirritable centers return to normal. It is desirable to initiate oral water intake as soon as advisable in order to reestablish the normal aboral gradient of activity; but, if the oral water is started too soon, the recovery of the hyperirritable mechanisms will be delayed.

No clinical study has been found on postoperative patients whose alimentary tract has not been entered, in which the matter has been quantitatively studied. To settle the question, it would be necessary to alternate a relatively large series of patients, one with water *ad libitum* and another with sips of tepid water beginning two hours after the cessation of nausea. It is probable that the latter group of patients would do better postoperatively.

B. When the gastrointestinal tract has been operated on, a period of forty-eight to seventy-two hours of complete abstinence from oral intake is usually prescribed in order to permit the intestinal suture lines to attain adequate tensile strength. During this period continuous decompression by the Wangensteen technic is usually employed. Sips of water, followed by clamping off of the tube, are then allowed. If reopening of the tube about a quarter to half an hour after ingestion of the water demonstrates that there is no retention, the tube may be removed and water subsequently administered in small graduated doses.

PROBLEMS OF Rh FACTOR

To the Editor:—1. Will a transfusion from an Rh negative woman in whom anti-Rh agglutinins have been developed by an Rh positive pregnancy cause hemolysis of the cells of an Rh positive recipient? 2. Is it possible for an Rh negative fetus to develop sufficient anti-Rh agglutinins to cause hemolysis of the mother's cells?

J. J. Johnson Jr., M.D., Las Vegas, N. M.

ANSWER.—A direct answer to this question is not possible because only a single experiment has been tried in which serum containing Rh antibodies was injected into an individual with Rh positive blood (Diamond, L. K., and Abelson, N. M.: The Importance of Rh Inhibitor Substance in Anti-Rh Serums, *J. Clin. Investigation* **24**:122 [Jan.] 1945.) In this particular case clinical evidence of hemolysis of the recipient's red cells could not be elicited in comprehensive tests carried out one hour after the injection. A reasonable prediction as to the consequences of such injections can be made on the basis of experience acquired with the transfusion of group O blood into individuals of other groups. If only a small amount of anti-Rh serum or if serum with only a low titer of Rh antibodies is injected into an Rh positive patient, harm would not be expected to result. If large amounts of a potent serum are injected, on the other hand, hemoglobinemia and hemoglobinuria would undoubtedly result, endangering the life of the recipient. Probably the nature of the Rh antibody, that is, whether it is univalent and bivalent (Wiener, A. S.: Rh Factors in Clinical Medicine, *J. Lab. & Clin. Med.* **30**:957 [Nov.] 1945), would also affect the outcome of the transfusion.

Fetuses and newborn infants do not have the capacity to form antibodies but depend for their immunity on maternal antibodies passively acquired through the placenta. Therefore it is not possible for an Rh negative fetus to form Rh antibodies at all, so there is no danger to the mother from this source.

SUBDELTOID BURSITIS

To the Editor:—What is the most successful treatment of subdeltoid bursitis with calcareous deposits in the shoulder joints, of about six months' duration?

Robert Watt, M.D., Frankford, Pa.

ANSWER.—Acute subdeltoid bursitis with calcareous deposits is usually preceded by injury to the supraspinatus tendon with calcification within the tendon. Injection of this tendon and the overlying bursa with procaine hydrochloride, followed by multiple perforations of the bursa by means of a larger needle, will create a rather severe hyperemia, which is a reaction of repair. If the bursa is distended with fluid and the calcium is not too dense, it is sometimes possible to wash out this material by placing the points of two gage 18 needles 3 inches long within the bursal sac. Sometimes it is possible to aspirate small amounts of a milklike fluid. More often it is necessary to force 10 or 15 cc. of procaine into the bursa, using a hypodermic syringe, with the result that this fluid is washed back out through the second needle, carrying with it some of the calcium content.

After either washing out of bursa or simply repeatedly needling the bursa and the calcified mass in the tendon or tendons (since the infraspinatus and other tendons in this region may also show calcium deposits), a shoulder which has caused disability for as long as six months should be treated by x-rays. As a rule, 200 or 300 roentgens, carefully filtered, will be sufficient. Diathermy, massage and gentle stretching to relieve adhesions and restore range of motion may be necessary for a period of several weeks after the initial needling and x-ray treatments.

Occasionally, but in a small percentage of these patients, an operation in which the shoulder joint capsule is exposed through a 3 inch incision from the tip of the acromium process downward, splitting the deltoid muscle and excising the calcium deposit, may be necessary.

ACIDIFICATION AND ALKALIZATION OF URINE

To the Editor:—What is the rationale of changing from acid to alkaline urine in treating urinary infections? If such rationale still holds, what would be the proper drug to use with alkaline urine—would a sulfonamide do, or penicillin? I assume that the use of methenamine with sodium acid phosphate to produce an acid urine is an accepted procedure.

R. W. Mueller, M.D., Los Angeles.

ANSWER.—Alkalization of the urine can be accomplished easily by the administration of sodium bicarbonate and by dietary means. It is doubtful, however, whether changing the reaction of the urine from acid to alkaline is of much practical value in the treatment of infection in the urinary tract. It is true that the growth of some bacteria is inhibited to some degree by strongly alkaline urine, but it is not feasible to produce a degree of alkalinity sufficient to be bactericidal.

It is believed that the sulfonamide drugs are slightly more efficacious in an alkaline urine than in an acid urine. It is questionable whether the reaction of the urine has any significance in giving penicillin.

Acidification of the urine by means of drugs or diet, on the other hand, can be carried out to such a degree that the viability of some bacteria is seriously affected. A hydrogen ion concentration of 4.5 is sometimes sufficient to eliminate bacteria such as Streptococcus fecalis. As a rule, however, acidification of the urine alone is insufficient to eliminate bacteria, so that antibacterial agents such as mandelic acid or methenamine should be employed in conjunction. The drugs usually employed for acidification of the urine are ammonium chloride and sodium acid phosphate. The ketogenic or high acid ash diet will also produce acidification of the urine.

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THE PROBLEM OF PRIMARY LATERAL SCLEROSIS

I. S. WECHSLER, M.D.
and
SELWYN BRODY, M.D.
New York

The syndrome of lateral sclerosis has been a subject of contention among neurologists ever since Erb first described it. Actually the spastic paralysis which bears his name was in the beginning regarded as syphilitic, but that was long before the spirochete was thought of or the Bordet-Wassermann reaction discovered. Later opinion was divided as to whether lateral sclerosis was a special entity or part of another syndrome. All neurologists conceded the existence of a familial form, but some questioned the occurrence of the syndrome in the adult on a nonhereditary basis. Gowers [1] regarded the syndrome as a disease entity; so did Oppenheim [2] and Spiller; [3] Wilson [4] did not; we do.

The reason why doubt has been cast on its existence is that lateral sclerosis may be the first, and for a long time remain the only, manifestation of what will later turn out to be multiple sclerosis, combined sclerosis or combined degeneration, amyotrophic lateral sclerosis or compression of the spinal cord. And it is, indeed, true that what at first appears to be a disorder limited to both pyramidal tracts merges sooner or later into another syndrome. To answer the question with some finality we studied the records of 61 patients who have been followed both in the hospital and in private practice for the past ten years. In all, the pyramidal tracts alone were the first to be involved, so that the tentative diagnosis of lateral sclerosis could reasonably be made. Of these 31 evolved as other syndromes and were naturally eliminated. The remaining 30 presumably persisted as lateral sclerosis for from four to ten years. They were observed from time to time and were recalled for examination when this study was begun. Only 16 returned. Reexamination showed that 13 of these persisted essentially as lateral sclerosis. These require further comment, but before taking up the discussion we should like to raise other questions which appear to be even more fundamental.

The words sclerosis and degeneration are generally used interchangeably. Indeed, all scleroses are spoken of as degenerative diseases. But what does sclerosis or degenerative mean? In essence it is a descriptive term to designate gradual disappearance of myelin sheaths, axis cylinders and nerve cells and their replacement with glia tissue. Obviously this is an end process, a necropsy diagnosis in vivo, which tells us little of etiology and less of pathogenesis. Sclerosis is no more descriptive than cirrhosis, which is another pathologic diagnosis in vivo. These convenient labels are illusory and give the impression of knowledge which we do not possess.

The conviction has gradually grown on neurologists that multiple sclerosis, of which lateral sclerosis may be a temporary manifestation, is not one disease entity but is the clinical expression of a variety of underlying factors. It is a congeries of syndromes. We now know that apparently the same "disease" may be the result of infection, probably virus, of sensitization, of vitamin or other deficiency and perhaps of vascular disease. The old quarrel whether multiple sclerosis is an inflammatory or so-called degenerative disease has lost its meaning; it is both, and more. The error lay in the fallacy inherent in generalization from particulars. Each pathologist accurately described what he saw, but he had no evidence for the conclusion that because one or more cases seemed to be inflammatory or "degenerative" in origin therefore all were.

Amyotrophic lateral sclerosis, into which "pure" lateral sclerosis may rapidly evolve, is another so-called degenerative disease. But here too we are not dealing with one disease entity. From a study of a very large series of cases we [5] have concluded, first, that there are two large groups, namely the primary and the symptomatic, and, second, that whereas the primary may represent a deficiency syndrome the symptomatic are the expression of an inflammatory, a vascular or a toxic process. They are different syndromes which look alike clinically. This fact explains why the first runs a nonremitting course to a comparatively rapidly fatal termination, while the second may linger on for five or ten years. It may also explain why some of the primary have responded to vitamin E treatment.

Some observers sought to link lateral sclerosis and even progressive spinal muscular atrophy with amyotrophic lateral sclerosis, but it is perfectly obvious that the evolution and the clinical history of each entity stamps them as separate. Limitation of the process to the pyramidal tracts, which lateral sclerosis is, results in a chronic condition lasting twenty or thirty years. The same is true of progressive spinal muscular atrophy, which is a very chronic process limited to the anterior horn cells. If, however, the pyramidal tracts and the anterior horns are simultaneously involved, the result is amyotrophic lateral sclerosis, which is a subacute syndrome terminating fatally in two or three years.

Dr. Brody is Dr. Isadore Abrahamson Fellow.

From the Neurological Service of the Mount Sinai Hospital.

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[1] Gowers, W. R.: A Manual of Diseases of the Nervous System, London, J. & A. Churchill, 1886, vol 1, p 330.

[2] Oppenheim, H.: Lehrbuch der Nervenkrankenheiten, ed. 7, Berlin, S. Karger, 1923, p 228.

[3] Spiller, W. G.: Primary Degeneration of the Pyramidal Tracts: Study of 8 Cases with Necropsy, Univ. Pennsylvania M. Bull. **17:** 390-407, 1904.

[4] Wilson, S. A. Kinnier: Neurology, edited by A. N. Bruce, Baltimore, Williams & Wilkins Company, 1940.

[5] Wechsler, I. S.; Saperstein, M. R., and Stein, A.: Primary and Symptomatic Amyotrophic Lateral Sclerosis, Am. J. M. Sc. **208:** 70-81, 1944.

REPORT OF CASES

CASE 1.—S. R., a man aged 43, in whom onset was gradual, with weakness of the legs in 1939, showed hyperactive deep reflexes, bilateral Babinski and preserved abdominal reflexes when examined in May 1944. No other pathologic signs were observed. Reexamination in April 1945 still showed limitation of the disease to involvement of the pyramidal tracts. The condition has lasted unchanged for six years.

CASE 2.—I. M., a man aged 51, in whom onset occurred in 1940 and who was first examined in May 1943, gave positive findings of hyperactive deep reflexes, normal abdominal reflexes and bilateral Babinski sign and no sensory changes or other neurologic signs. Reexamination in April 1945 showed no progression but continued limitation of signs to involvement of the pyramidal tracts. Duration has been five years. This patient had a spinal fluid protein of 60 mg. per hundred cubic centimeters.

CASE 3.—E. O'G., a woman aged 51, in whom gradual onset occurred in March 1939, showed in March 1940 the clinical syndrome of pure pyramidal tract disease, that is, only lateral sclerosis. Reexamination in April 1945 showed no signs of involvement of other structures of the nervous system except for slight impairment of position and vibratory sensation in the lower extremities. Duration has been six years.

CASE 4.—M. B., a woman aged 55, began to complain of gradually progressive weakness of the legs in 1937. She was first examined in February 1944, when she presented only bilateral involvement of the pyramidal tracts. Reexamination in April 1945 showed progressive but continued limitation of the disease to the pyramidal tracts, plus very slight impairment of vibratory and position sensation in the toes and feet. Duration has been eight years.

CASE 5.—A. DeC., a man aged 23, in whom onset occurred in 1941 with progressive weakness of both lower extremities, showed bilateral pyramidal tract disease and nothing else when examined in March 1944. No history of remissions was elicited. Reexamination in April 1945 again showed a syndrome of pure lateral sclerosis with involvement alone of the pyramidal tracts. No signs of spread or dissemination. Duration has been four years.

CASE 6.—I. F. I., a woman aged 42, in whom the condition began gradually in 1940, showed only bilateral pyramidal tract signs and no evidence of dissemination or a history of remissions when examined in January 1945 and again in April 1945. In this case there arose the question of familial incidence because the mother and a sister, who had not been examined, are said to have had sclerosis. Duration has been five years.

CASE 7.—B. F., a woman aged 36, in whom the condition set in with weakness of the legs in 1938, felt better during one pregnancy after that date, but in the main the weakness of the legs progressed. Examination in 1943 showed only bilateral pyramidal tract signs. Reexamination in April 1945 still revealed a primary lateral sclerosis. Duration has been seven years.

CASE 8.—E. P., a man aged 36, in whom the onset of the present illness dated back to 1938, which has been progressive to date, showed bilateral pyramidal tract signs limited to the lower extremities when examined in August 1944. In April 1945 he still had signs only of pyramidal tract disease. Duration of the illness has been seven years. In this case there was a history of injury to the spine in 1937, but neither then nor for a year thereafter was there evidence of disease.

CASE 9.—H. B., a man aged 49, in whom gradual onset of the illness became manifest in 1942, presented signs limited entirely to disease of the pyramidal tracts bilaterally in December 1943. The weakness and the stiffness of the legs increased, and on reexamination in April 1945 he showed only the syndrome of lateral sclerosis with pure pyramidal tract signs. Duration has been three years.

CASE 10.—R. F., a man aged 30, in whom the disease began gradually in 1933 and progressed unchanged for twelve years, was first examined in March 1941. At that time he showed only the usual signs of bilateral pyramidal tract involvement. The condition progressed without remissions. When reexamined in April 1945 he still presented signs indicative only of pyramidal tract disease. Duration has been twelve years.

CASE 11.—H. M., a woman aged 41, in whom the onset was gradual and dated to March 1941, was first seen in February 1943, when she showed bilaterally hyperactive knee and ankle jerks, absent abdominal reflexes and defective plantar responses. The disease progressed without remission. Reexamination in April 1945 showed more advanced involvement of the pyramidal tracts. There was, in addition, slight impairment of position and vibratory sensation. Duration has been four years.

CASE 12.—J. C., a woman aged 46, in whom the onset was gradual and dated back to 1938, was first examined in April 1940, showing typical lateral sclerosis with bilateral pyramidal tract signs, including the Babinski sign and absent abdominal reflexes. Reexamination in April 1945 disclosed progressive weakness and spasticity with continued limitation to involvement of the pyramidal tracts, except for slight impairment of position and vibratory sensation in the legs. Duration has been seven years.

CASE 13.—A. C. W., a man aged 49, in whom the onset was gradual and dated to July 1938, showed signs referable only to the pyramidal tracts when first seen in 1940. The condition slowly progressed. Reexamination in April 1945 showed advanced spasticity, hyperactive deep reflexes, Babinski and so on, that is lateral sclerosis, and no signs of involvement of other structures except for mild impairment of position and vibratory sensation in the legs. Duration has been seven years.

CASE 14.—H. E., a man aged 42, in whom the disease began gradually in 1940 with weakness of the legs and spasticity, showed a pure lateral sclerosis when examined in February 1944. The condition gradually grew worse. When reexamined in April 1945 he still showed only increased deep reflexes, absent abdominal reflexes and bilateral Babinski sign, with no signs of spread or dissemination. Duration has been five years.

CASE 15.—R. K., a woman aged 43, in whom the onset of the illness was gradual in 1940, when the legs had become weak and stiff, showed spasticity and weakness of both lower extremities, hyperactive tendon reflexes and Babinski sign when examined in August 1944. She grew worse as time went on. When reexamined in April 1945 the signs were still limited to disorder of the pyramidal tracts; that is, she had lateral sclerosis and nothing else. Duration has been five years.

COMMENT

From the description of the cases it is clear that the disease syndrome which one frequently observes unchanged over many years may be properly designated as primary lateral sclerosis. The rather large number of patients who have been studied over a comparatively long time justifies the inference that the scleroses are occurring with increasing frequency. What the cause may be we do not know and can only conjecture. Evidently there is a certain degree of selectivity by the noxious process, whatever its nature, and limitation to certain pathways in the spinal cord. This principle of selectivity holds true of many diseases of the nervous system. Whether or not it is the result of special properties of the noxious agents or of the varying chemical constitution of the different structures within the nervous system, the fact is that there exists selectivity of involvement. In some cases the selectivity affects only the brain or the cerebellum or the spinal cord; in others the white matter alone may be affected or the gray substance, or the anterior cells with nuclear masses in the brain; in still others only certain pathways or tracts are involved even though all appear as white matter. The same principle of selectivity holds with regard to the effects of deficiency on structures of the nervous system, as it does with endogenous or exogenous toxins, with bacterial or virus infections or other noxious agents. This is exemplified in the combined degeneration of pernicious anemia and in vitamin B_1 deficiency. It may hold for vitamin E and possibly for others yet to be determined. It is true of protein sensitization and the rare allergic reactions seen in the nervous system.

Characteristic of disease of the nervous system is the similarity of the clinical pictures almost irrespective of the underlying cause. The manifestations are the same provided the same structures are affected. It does not matter, for instance, whether it is an infection, disease of a blood vessel, a new growth, a trauma or a so-called degenerative process which affects the corticospinal tract, say, above the medulla; the result always is hemiplegia. In large measure the same thing holds for the meninges. Whatever the infection, the result is meningitis. The onset, the course, the treatment and the prognosis vary with the etiologic factors; the clinical pictures are fairly similar.

The question has been raised whether despite the long persistence of the syndrome of primary lateral sclerosis it does not belong to multiple sclerosis just the same. Aside from the fact that multiple sclerosis is merely a convenient label, the outstanding ultimate characteristic of the syndrome is its dissemination. None of the patients herein described showed this characteristic. There was no history of transitory episodes in any of them. That a few did show slight evidence of involvement of the posterior column does not, we believe, invalidate the statement. Other authors, namely Gowers, Oppenheim and Bing, have observed similar involvement. This speaks for slight spread but not for dissemination. The same authors, and others too, have mentioned sphincter disturbances. We recorded incontinence in only 2 patients, and that rarely, but these showed clinically pure involvement of the pyramidal tracts in the spinal cord. With but 1 minor exception, all cases followed a progressive and unremitting course. Again, with one doubtful exception there was no history of familial involvement in the group under discussion.

Laboratory studies in all cases failed to throw light on the etiology but served to eliminate other diseases. The Bordet-Wassermann reaction was universally negative in the blood and spinal fluid in the patients included in this group. With 1 exception, the spinal fluid protein was normal, and there was no increase of cells. Complete blood counts and hemoglobin determinations showed no anemias or other deviations from the normal. Gastric acidity was normal in all patients.

Reverting once more to the question of selective involvement by noxious agents of certain pathways in the spinal cord, we should like to refer to lathyrism. This disease too seems to be limited to disorder of the pyramidal tracts. The lathyrus, and it is not wholly settled whether this alone is the cause, seems to have specific affinity for the corticospinal pathways in the lateral columns of the spinal cord. But despite the limitation of the disease to the pyramidal tracts, incontinence of urine is occasionally observed during the course of the illness. Minchin,[6] who mentions this, also raises the question of nutritional deficiency in lathyrism.

The apparent increase in the incidence of primary lateral sclerosis, and for that matter of other so-called degenerative diseases, raises the question of the effect of nutritional factors on the incidence of the various disease syndromes. Many observers have commented on the radical changes in the dietary habits of the population. From a bread-eating, meat-consuming people we have become a vegetable-milk-egg-cereal eating nation, with the bread and cereals one does eat made of finely milled corn and wheat products. There seems to be an increase too in the incidence of all sorts of allergic reactions. Virus infections, hitherto unrecognized, are uncovered in ever greater numbers. Finally, we see ever more benign so-called degenerative diseases syndromes. Thus, while one still observes severe and even malignant types of multiple sclerosis, one comes across as many or more typically disseminated syndromes which run a comparatively benign course. Whether the factors mentioned have explanatory validity can only be conjectured for the present.

SUMMARY

Primary lateral sclerosis seems to be a distinct clinical syndrome unrelated to the other scleroses. The words sclerosis and degenerative, which are used interchangeably, may be usefully employed but only for convenient nosologic purposes. They are descriptive terms of pathologic end processes, literally autopsy diagnoses in vivo, and tell us nothing of etiology or of pathogenesis. Time alone will tell whether the scleroses represent virus infections, deficiency reactions or allergic syndromes, and only chemical, pharmacologic and pathophysiologic studies will throw light on these most obscure clinical entities. The scleroses represent syndromes which appear to be the result of the selective affinity of various endogenous or exogenous noxious agents for specific structures of the nervous system. For the present the various entities must be viewed merely as the clinical expression of anatomicopathologic syndromes of unknown etiology and pathogenesis. Neither multiple sclerosis nor amyotrophic lateral sclerosis presents a single etiologic or pathologic entity. Each consists of several different syndromes, although clinically they fall into fairly consistent groups. Amyotrophic lateral sclerosis consists of two large groups, namely the primary and symptomatic, the latter of at least three subdivisions. There seems to be an increase in the incidence of the lateral and other scleroses, that is, of the so-called degenerative diseases of the nervous system. There also appears to be an increase in the more benign types, so that, despite want of knowledge of causes, one may venture a less hopeless prognosis.

70 East Eighty-Third Street, New York 28.

ABSTRACT OF DISCUSSION

DR. FREDERICK P. MOERSCH, Rochester, Minn: The problem of primary lateral sclerosis is one that always arouses a healthy controversy among neurologists. There are those neurologists who steadfastly maintain that there is no such disease syndrome as primary lateral sclerosis, while other neurologists are willing to accept its existence. It is gratifying to have at this time in the inimitable style of the writers an authoritative analysis of their own cases of lateral sclerosis. Dr. Stark and I recently completed a similar review of our cases of lateral sclerosis, and we find that our observations and conclusions agree very closely with those of Wechsler and Brody. Whether lateral sclerosis represents a distinct clinical syndrome or is but a phase or forerunner of multiple sclerosis, combined sclerosis or amyotrophic lateral sclerosis is more than a question of academic interest. Certainly the diagnosis of multiple sclerosis continues to carry with it a seriousness, if not of immediate importance, certainly of lurking difficulties ahead. On the other hand, primary lateral sclerosis as qualified by Wechsler and Brody carries with it a much more favorable prognosis in the majority of cases. That the nervous system reacts in a rather limited manner to noxious agents is an observation of considerable importance. This observation may in a measure account for the many instances of so-called sclerosis of the cord which seemingly are the results of very diverse causes. This observation may also aid in explaining the fact that from the clinical standpoint we are unable to differentiate the familial cases of lateral sclerosis or multiple sclerosis from the cases in which there is no familial history. Probably until we uncover the cause of these conditions we cannot hope to solve the riddle presented by these disease conditions. As stated by Wechsler and Brody, a diagnosis of primary lateral sclerosis early in the disease process carries with it considerable doubt as to its accuracy, for with the passage of time the lateral sclerosis may prove to have been the forerunner of some more widespread disease of the spinal cord or even a focal compression at some point along the spinal cord. If the affliction persists for ten or more years without evidence of dissemination or signs of focal compression of the spinal cord, the diagnosis of primary lateral sclerosis would seem to be well substantiated. Just why some mild changes in the posterior columns appeared in a few patients with primary lateral sclerosis is not clear. In our cases these findings were attributed to changes in the posterior column secondary to the age of the patient. We have not been struck with the increase in the incidence of lateral sclerosis. However, our incidence of multiple sclerosis has been on the increase, but we have attributed this to the anxiousness on the part of patients seeking some form of therapy

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[6] Minchin, R. L. H.: Primary Lateral Sclerosis of South India (Lathyrism Without Lathyrus), Brit. M. J. 1:253-255, 1940.

Dr. Henry Alsop Riley, New York: The views expressed by Drs. Wechsler and Brody are those which are accepted by the majority of neurologists at the present time. Lateral sclerosis may be a primary disease or may be the first manifestation of other system diseases such as multiple sclerosis, dorsolateral spinal degeneration, amyotrophic lateral sclerosis and myelopathies resulting from various etiologic agents. In order to make a diagnosis of primary lateral sclerosis it is necessary to follow a patient for a considerable length of time before one can be certain that the condition is limited to the pyramidal tracts and not merely the first symptom of other types of disorder. Neurologists of any experience have seen many instances of all these various combined disorders. In some instances spinal cord neoplasms may for many years present the picture only of isolated pyramidal tract disease, the other definitive symptoms appearing only much later than the development of the pyramidal tract dysfunction. It is therefore of essential importance for any patient who presents seemingly pure pyramidal tract symptoms to be followed carefully and examined at relatively frequent intervals in order that one may be sure of the continuing clinical picture. I believe that there might be some reservation raised with regard to those cases included in the group which showed involvement, minimal though it may be, of the dorsal columns as shown by the reduction in vibratory and muscle-tendon sensibility. Primary lateral sclerosis should present no sensory disturbances. The presentation of a group of patients such as Drs. Wechsler and Brody have described is of value in emphasizing the necessity for periodic neurologic examinations in order that remediable conditions may not be missed.

Dr. H. Houston Merritt, Boston: The existence of a primary lateral sclerosis as a clinical entity has been doubted by most modern neurologists. Although cases with symptoms and signs limited to those which result from injury to the pyramidal tract are not infrequently encountered, it is not uncommon, as the authors point out, for such cases to develop evidence of involvement of other parts of the nervous system and thus place the case in another diagnostic category such as multiple sclerosis, amyotrophic lateral sclerosis and spinal cord tumor. In addition, pathologic verification of this entity is lacking. Drs. Wechsler and Brody in the introduction to their study say that they believe that primary lateral sclerosis is a disease entity, but in their summary they modify this by stating that primary lateral sclerosis is a distinct clinical syndrome unrelated to the other scleroses. They state that the scleroses in general (i. e. multiple sclerosis, amyotrophic lateral sclerosis, primary lateral sclerosis) appear to be the result of the selective affinity of various endogenous or exogenous noxious agents for specific structures of the nervous system. Unfortunately none of the patients presented in their study had died and they have no pathologic data to show that the disease process was limited to sclerosis of the pyramidal tract. When one considers the fact that the posterolateral sclerosis which accompanies primary anemia was once considered a system disease but that pathologic studies have shown that the nervous system is diffusely affected in this condition, the skeptic would still conclude that neither is the existence of primary lateral sclerosis as an entity proved nor is there any satisfactory proof that various noxious agents have a selective affinity for special parts of the nervous system.

PHYSICAL RECONDITIONING AFTER RHEUMATIC FEVER

PETER V. KARPOVICH, M.D.
Randolph Field, Texas
LIEUTENANT COLONEL MERRITT P. STARR
CAPTAIN ROBERT W. KIMBRO
MAJOR CHARLES G. STOLL
Medical Corps, Army of the United States
and
CAPTAIN RAYMOND A. WEISS
Air Corps, Army of the United States

There is a great deal of diversity in AAF hospitals regarding the management of the period of convalescence after rheumatic fever. It varies from a prolonged restriction of physical activities to an early participation in special exercise which often may require a great deal of exertion. This difference in attitude regarding physical activity can be explained easily. On the one hand, it has been a medical tradition, based mainly on observation among children, that rest is an essential part of the rheumatic fever regimen not only during the active stage of the disease but also during a long period of time afterward. On the other hand, accumulated experience with rheumatic fever has indicated that this disease affects adults in a lesser degree than children, and therefore the management of the patients in the two instances may not be the same. Moreover, the present attacks on the "abuse of bed rest" in the treatment of various diseases, including those of the heart, have led to the question whether a prolonged period of physical inactivity during convalescence after rheumatic fever is beneficial or not.

The AAF convalescent policy is to recondition patients before their discharge from the hospital and to prepare them, when possible, for full or limited military duty. Therefore it is of practical importance to assess and develop to the required level the capacity of the patients for physical exertion while they are in the hospital.

The need for some practical tests for determination of the physical fitness of patients convalescing from rheumatic fever has been recognized before. Swift and McEwen [1] started physical [illegible] of patients convalescing from rheumatic [illegible] them to sit in a stationary chair for a progressively increasing length of time. After the patients had become accustomed to sitting most of the day, they were permitted to make short walks in the ward. "The first walk consisted of about 50 feet, the second either the same amount or double that, the third about 100 feet, and then the amount is increased slowly according to the patient's response." [2] Wilson [3] described a set of arbi-

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From the Laboratory of Physical Fitness, AAF School of Aviation Medicine, Randolph Field, Texas (Dr Karpovich and Captain Weiss) and the AAF Regional Hospital, San Antonio Aviation Cadet Center, San Antonio, Texas (Lieutenant Colonel Starr, Captain Kimbro and Major Stoll).

[1] Swift, Homer F., and McEwen, Currier: Rheumatic Fever, in Oxford Loose-Leaf Medicine, New York, Oxford University Press, 193[illegible], vol. 5, p. 38(47).

[2] Swift, Homer F.: Personal communication to the authors.

[3] Wilson, May G.: Rheumatic Fever, New York, Commonwealth Fund, 1940, p. 412.

trary tests consisting of dumbbell swinging and stair climbing. As criteria for appraising the degree of fitness she used the color of the face, the degree of dyspnea and the type of systolic blood pressure curve plotted from determinations made at frequent intervals after exercise.

Our purpose in the present study was to apply certain physical fitness tests to the patients convalescing from rheumatic fever in order to determine (*a*) how soon after clinical subsidence of the disease a patient can safely participate in physical training and (*b*) how much time is required in order to regain the degree of physical fitness necessary for limited and full military duty.

METHODS

In designing the present study it was decided to start testing the physical fitness of the patients after a two week period of quiescence of the disease, with the exceptions to be noted. Criteria for the beginning of the quiescent period were normal temperature, an erythrocyte sedimentation rate of 15 mm. or less (Westergren method), a normal electrocardiogram and the absence of arthralgia. During this period no salicylates were given. Eighty-eight patients convalescing from rheumatic fever at the AAF Regional Hospital, San Antonio Aviation Cadet Center, San Antonio, Texas, were used as subjects. These patients were at various stages of convalescence (table 1).

Because of the great variation in the length of time from the beginning of the quiescent period to the beginning of testing, all patients studied in the present investigation were divided into three groups, A, B and C.

Group A, consisting of 22 men, was living in the barracks at the beginning of this study. For these men an average of three months had elapsed since the first day of quiescence. The exact time when these patients were made ambulatory could not be ascertained from their hospital records. They had had no special physical training program. Some of them had had furloughs; some had been sent for two weeks to a convalescents' camp located in a hilly section of Texas.

Group B, consisting of 30 men, had an average of 77.3 days of quiescence before the testing and physical activation began.

Group C, consisting of 36 men, was activated after an average of 16.2 days of quiescence.

Physical Fitness Tests.—In selecting tests of physical fitness suitable for the present investigation, it was decided to use the same stepping-up tests which were used in a study conducted on patients with upper respiratory diseases[4] However, because rheumatic fever is a more debilitating disease it seemed advisable to introduce one additional mild test which could be used as the first test.

Thus, there were three stepping-up tests used in this study:[5]

1. Preliminary test, consisting of twelve complete steps in thirty seconds, using a 12 inch bench, referred to in this study as the "12 inch test."
2. Preliminary test, consisting of twelve complete steps in thirty seconds, using a 20 inch bench, referred to in this study as the "20 inch test."
3. Progressive test, consisting in stepping on a 20 inch bench at a rate of twenty-four complete steps per minute for as long as the patient could continue but no longer than five minutes.

Scoring in Preliminary Tests.—Possible scores in preliminary tests were either "passed" or "failed." The criteria were the same for both the 12 inch and the 20 inch tests. The pulse rate with the subject sitting was taken one minute after exercise for thirty seconds and multiplied by 2. If the postexercise pulse rate was 100 or less, the cardiac reaction was considered normal on the basis of a previous investigation. If, however, muscular coordination was not good and the patient had difficulty in executing the step-ups and in maintaining the cadence, he was considered as failing, regardless of his pulse reaction.

If the patient failed the 12 inch test, he was considered a bed patient and was given an additional medical examination and then retested in a day or two. If the patient passed the 12 inch test, he was given the 20 inch test on the same day. If he passed the 12 inch but failed the 20 inch test he was allowed to be ambulatory but not allowed to take part in ward exercises and was retested one or two days later. The patient who had passed both preliminary tests was placed on the ward exercise program.

Table 1.—*Frequency Distribution of the Number of Patients Respective to the Length of Time Elapsed from the Beginning of the Quiescent Period to the Beginning of Testing*

	Number of Men
1 week	11
2 weeks	7
3 weeks	10
4 weeks	11
5 weeks	[illegible]
6 weeks	5
7 weeks	4
8 weeks	3
9 weeks	[illegible]
10 weeks	4
11 weeks	5
12 weeks	1
13 weeks	3
14 weeks	0
15 weeks and over	18

Scoring in the Progressive Test.—Two days after passing the 20 inch preliminary test and after having had ward calisthenics, the patients were given the progressive test. The degree of fitness was estimated by the duration of well tolerated exercise, as judged by the absence of signs of distress, and by the pulse rate taken in a sitting position for half a minute, starting one minute after exercise. The possible scores in this test (table 2) are low, fair and good. For those who scored "low," the test was repeated after three or four days depending on the soreness of the leg muscles. After the patients had scored "fair," they were tested only once a week.

Erythrocyte Sedimentation Rate.—As a matter of precaution regarding the possible untoward effect of exercises, it was decided to test the patient's erythrocyte sedimentation rate twenty-four hours after each physical fitness test. This was done because a previous investigation[6] showed that after strenuous muscular work the erythrocyte sedimentation rate should return to normal within twenty-four hours.

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[4] Karpovich, Peter V.; Starr, Merritt P., and Weiss, Raymond A.: Physical Fitness Tests for Convalescents, J. A. M. A. **126**: 873 (Dec. 2) 1944.

[5] Stepping technic is the same for all three tests. The subject stands in front of the bench and steps up on it with one foot and then with the other. He steps down in the same order. Four counts are used for each complete step. The stepping rate is 24 complete steps per minute. The cadence, therefore is 96 counts per minute.

[6] Black, William A., and Karpovich, Peter V.: Effect of Exercise on the Erythrocyte Sedimentation Rate, Am. J. Physiol. **144**: 224, 1945.

Physical Training Program.—A detailed description is given elsewhere;[7] only essentials will be outlined here. The graded physical training program was divided into three phases officially designated as III, II and I. The relationship between the present numerical classification and the former color designation is shown in table 2 in order to avoid confusion in reading some of the references mentioned in this article.

Phase III consisted of two ten minute periods of calisthenics usually given in the ward, for which reason this phase was known also as "ward exercises." The intensity of activity during the beginning of this phase was mild, raising metabolism about 100 per cent over that at rest. By the end of two weeks exercise metabolism was increased to 600 per cent over resting metabolism.

At that time patients were reexamined, and if there was no medical contraindication they were allowed to participate in mild games either outdoors or in a gymnasium. These games were given in addition to the calisthenics; therefore the time for each period was extended to thirty minutes, which included the time of walking to the place designated for the games. This part of the third phase continued for one week.

TABLE 2.—*Scoring Table for Progressive Test*

Duration of Exercise	Pulse Rate One Minute After Exercise	Score
Below 2'	Any rate	Low
2' to 2'29"	Above 100	Low
	Below 100	Fair
2'30" to 2'59"	Above 130	Low
	Below 130	Fair
3' to 3"29"	Above 140	Low
	100 to 140	Fair
	Below 100	Good
3'30" to 3'59"	Above 170	Low
	110 to 170	Fair
	Below 110	Good
4' to 4'29"	Above 130	Fair
	Below 130	Good
4'30" to 4'59"	Above 140	Fair
	Below 140	Good
5'	Above 150	Fair
	Below 150	Good

After a patient had been in phase III for three weeks and had scored "fair" on the progressive test, with the approval of the ward medical officer he was transferred to the barracks and placed in phase II of the training program. This phase continued for four weeks and was conducted outdoors. In addition to calisthenics and games, some running was included. The time allotted was forty minutes once a day during the first two weeks and fifty minutes during the last two weeks.

Patients who were on program II for four weeks and scored "good" in the progressive test were reexamined by the medical officer and with his approval were moved to the more strenuous program, I, which lasted seventy to eighty minutes once a day during the first two weeks and eighty minutes during the last two weeks.

RESULTS

The pertinent data regarding the improvement in physical fitness of each group and the disposition of the patients at the time of their discharge from the hospital are given in table 5. It is evident that group A was in a fair state of physical fitness when the testing was started, since within an average of 2.3 days after the testing began 21 men out of 22 scored "fair" on the progressive test and 10.6 days later 20 men scored "good."

TABLE 3.—*Comparison of Functional, Numerical and Color Classification of the Patients*

Functional	Official Numerical	Color
Bed*	IV*	White*
Ward-ambulatory	III	Red Orange
Barracks	II I	Blue Green

* No exercise was given during this phase.

The average rate of improvement in physical fitness of the patients in group B was approximately the same as in group C. To score "fair" group B required 21.5 days and group C 19.1 days. To score "good" group B needed altogether 31.2 days and group C 39.9 days. This means that prolonged bed rest during the period of quiescence did not result in a noticeable physical deterioration. Such an observation is not surprising, because in an AAF hospital bed rest during convalescence is often fictional, as the patients while unobserved may indulge in physical activity to a great extent.

Not all patients reached phase I of the training program. Some of them obviously reached the limit of physical fitness at phase II. Since this level appeared to be sufficiently high for men who were not going to engage in strenuous physical work, it was decided not to hold such patients in the hospital until they scored "good" on the progressive test but discharge them from the hospital six months after the onset of rheumatic disease. These patients were able to perform efficiently limited military duty.

At the time of discharge from the hospital, only 1 patient from group A received a certificate of disability for discharge, as compared with 4 men from group B and 6 from group C.

The causes for issuance of certificates of disability for discharge are given in table 4.

TABLE 4.—*Causes for Issuing Certificates of Disability for Discharge*

	Number of Men	
Group A	1	*Cardiac* lesion developed during present hospitalization
Group B	2	Cardiac lesion developed during present hospitalization
	1	Old cardiac lesion
	1	Rheumatoid arthritis
Group C	1	Cardiac lesion developed during present hospitalization
	1	*Old cardiac lesion*
	2	Rheumatoid arthritis
	2	Duration of active phase of disease beyond 3 months

Cardiac Patients.—Altogether in the three groups there were only 6 patients who developed definite valvular changes in the heart during the active phase of the disease, and 4 patients who developed either grade II or grade III systolic murmurs, thereby being designated as possible cardiac patients.[8] Moreover, there were 4 patients who, on the day of admission to the hospital, had definite cardiac lesions which did not change during six to nine months of disease and convalescence. A brief description of diagnostic data for these patients is given in table 6. The diagnoses were made independently by three medical officers.

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[7] Weiss, Raymond A.: Physical Training Program for Patients Recovering from Rheumatic Fever, *Project Report* No. 246, Report No. 3, AAF School of Aviation Medicine, March 10, 1945; Oxygen Consumption During Various Calisthenic Exercises, *Project* Report No. 246, Report No. 2, AAF School of Aviation Medicine, Nov. 4, 1944.

[8] Nomenclature and Criteria for Diagnosis of Diseases of the Heart, American Heart Association, St. Louis, C. V. Mosby & Company, 1943.

All patients who exhibited abnormalities of the heart as evidenced by electrocardiogram, x-ray or auscultation were frequently reexamined by the medical officer in charge, and testing was started only when there was no evidence of an active pathologic process in the heart.

Of 14 patients with cardiac lesions (table 4) only 1 did not score "fair," and of 13 who scored "fair" only 2 did not reach the "good" level of physical fitness. It may be noted here that the individual variations in regaining and developing physical fitness could not be predicted on the basis of the diagnostic findings in the heart indicated in table 6.

TABLE 5—*Summary of the Improvement in Physical Fitness of Patients in Groups A, B and C and the Decision of the Disposition Board*

						Progressive Test Score				Disposition			
				Days of		Fair		Good					
Group	Number of Men in Each Group	Number of Recurrent Cases	Number of Definite or Possible Cardiac Cases	Duration of Disease	Duration of Quiescence	Number of Men	Number of Days from Preliminary Test to Scoring "Fair"	Number of Men	Number of Days from Preliminary Test to Scoring "Good"	Number of Men Discharged from Hospital	Full Military Duty	Limited Duty	Certificate of Disability for Discharge
A	22	1	5	41.3	91.1	21	2.3	20	10.6	22	16	5	1
B	30	11	4	33.2	77.3	30	21.5	21	31.2	29	22	3	4
C	36	13	1	66.8	16.2	35	19.1	29	39.9	35	23	2	6
Totals..	88	..	..	....	....	86		80		86	61	10	11

TABLE 6.—*Brief Diagnostic and Physical Fitness Data on Patients Who Developed Definite (D), or Possible (P) Heart Disease During Present Hospitalization, or Who, on Admission to the Hospital, Had Valvular Lesions Which Had Not Changed by the Time of Discharge (S)*

					Days from		
Group	Subject	Diagnosis at Admission	Diagnosis at Discharge	Classification	Preliminary Test to Scoring "Fair"	"Fair" to Scoring "Good"	Disposition
A	1	Normal	Mitral stenosis; mitral systolic murmur, grade II	D	1	1	Certificate of disability for discharge
	2	Mitral systolic murmur, grade I	Mitral systolic murmur, grade II	D	1	0	Limited military duty
	3	Mitral systolic murmur, grade I	Aortic insufficiency; mitral systolic murmur, grade II	D	..	..	Limited military duty
	4	Mitral systolic murmur, grade I	Mitral systolic murmur, grade II	P	1	1	Full military duty
	5	Mitral systolic murmur, grade I	Mitral systolic murmur, grade II	P	1	31	Limited military duty
	6	Mitral systolic murmur, grade II	Same as at admission	S	1	0	Full military duty
	7	Aortic and mitral insufficiency	Same as at admission	S	12	56	Limited military duty
B	8	Normal	Mitral stenosis; mitral systolic murmur, grade III	D	8	18	Certificate of disability for discharge
	9	Aortic insufficiency; mitral systolic murmur, grade I	Aortic insufficiency; mitral stenosis; mitral systolic murmur, grade II	D	57	*	Certificate of disability for discharge
	10	Mitral systolic murmur, grade I	Mitral systolic murmur, Grade II	P	44	12	Limited military duty
	11	Normal.	Mitral systolic murmur, grade III	P	122	*	Certificate of disability for discharge
	12	Mitral systolic murmur, grade II	Same as at admission	S	3	3	Certificate of disability for discharge
C	13	Mitral systolic murmur, grade I	Mitral stenosis; mitral systolic murmur, grade II	D	9	20	Certificate of disability for discharge
	14	Mitral systolic murmur, grade II	Same as at admission	S	18	4	Certificate of disability for discharge

* Did not make the score.

There is general agreement that in the presence of carditis it is wiser to reduce the amount of heart activity, and therefore bed rest is indicated. However, since there is no method for diagnosing latent pathologic processes in the rheumatic heart a conservative physician frequently tends to suspect the existence of such a process in the heart of every patient. For this reason it was of interest to establish a relationship between early activation and the incidence of pathologic cardiac changes. From tables 5 and 6 it may be seen that the incidence of definite and possible heart disease acquired during the present illness was distributed among the groups as follows: group A, 5; group B, 4; group C, 1. The numbers are too small for justifying conclusive statements. The fact, however, that the average length of rheumatic activity was longest and the duration of the quiescent period shortest in group C, in which the number of cardiac patients was the smallest, indicates that the organized graded physical training program was safe for these patients.

Clinically evident cardiac lesions in all cases with the exception of 1 (subject 8 in group B) developed before physical activation started. It is of interest that the 2 cardiac patients in group C, 1 with an old cardiac lesion and the other with a lesion acquired during the present illness, had periods of quiescence of fifteen and twelve days respectively, whereas for cardiac patients in group B the period of quiescence ranged from sixty-seven to one hundred and forty-four days.

Erythrocyte Sedimentation Rate.—Altogether 671 erythrocyte sedimentation rate determinations were made on 88 subjects after they took the progressive test. In only 22 determinations did the rate go above 15 mm. These 22 elevations were all on 16 patients, 6 of whom were responsible for 11 of the 22 readings. It was noted, however, that these 6 men had occasional slight elevations of the erythrocyte sedimentation rate which had no relation to physical training or testing.

An attempt was made also to determine the relationship between the behavior of the erythrocyte sedimentation rate during the course of the disease and the length of time it took to regain a certain level of physical fitness during the period of convalescence. In order to combine the height and the duration of the erythrocyte sedimentation rate elevation, the erythrocyte sedimentation rate area was calculated. This was done in the following manner: The erythrocyte sedimentation rate was plotted on graph paper against the time in days (chart 1) and a horizontal line was drawn at the level of 15 mm. (normal erythrocyte sedimentation rate). The abnormal erythrocyte sedimentation rate area is then the area which is bound by the vertical axis on the left, the erythrocyte sedimentation rate curve above and the 15 mm. line below.

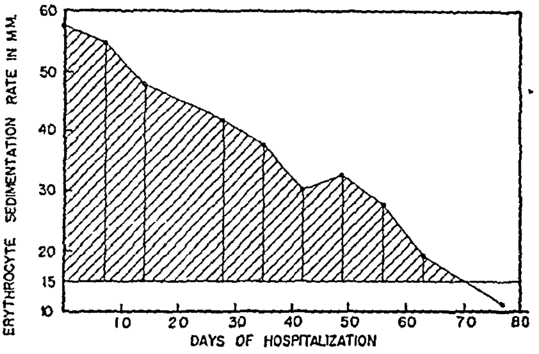

Chart 1.—Erythrocyte sedimentation rate area. The abnormal erythrocyte sedimentation rate area is represented by the shaded area, which is divided for the purposes of calculation into series of trapezoids and one triangle.

The limitation of this method is evident, because the erythrocyte sedimentation rate was determined only once a week or even less frequently. The criterion of progress in physical fitness was accepted as the time in weeks from the beginning of the period of quiescence to the scoring of "fair" on the progressive test.

For this comparison only 15 patients who received the preliminary test not later than three weeks after the beginning of the period of quiescence were used. Analysis of the data showed no significant statistical relationship between the erythrocyte sedimentation rate area and the time required to score "fair" on the progressive test because the coefficient of correlation was only 0.49, whereas in order to be significant it should be at least equal to 0.64.

COMMENT

Since in rheumatic fever greatest concern is given to a probability of cardiac damage, the tests of physical fitness employed in this study were those which emphasized cardiac function. It is realized that pulse response to an exercise is not always dependable; but. when it is combined with the observations of the actual performance in stepping up, results are gratifying. The periodic testing supplied objective evidence concerning the physical fitness of convalescents. In chart 2 are represented the records of a good and a poor recovery. The endurance time of subject A increased but little in ten weeks. and his pulse rate was high, fluctuating between 160 and 170 beats per minute. It was obvious that the degree of physical fitness of this patient was poor. At the time of discharge from the hospital he was judged to be unfit for full military duty. The duration of the stepping up (endurance time) of subject B increased in about seven weeks from forty-five seconds to five minutes, whereas the pulse rate. which had been increasing with the lengthening of endurance time for three weeks, started to slow down and continued to do so after the endurance time reached the five minute limit. This patient, at the time of discharge from the hospital, was pronounced physically fit for full military duty.

This investigation showed definitely that the testing records in most instances substantiated the judgment of ward officers and, when different, tended to cluster on the conservative side. The testing can easily be performed by a nurse, but it is worth while for the ward officer to observe the patients' progress in regaining physical prowess, which, after all, is the ultimate goal of therapeutic efforts. A prolonged bed rest ordinarily results in comparatively little rest, either physically or mentally. In the present investigation the duration of bed rest after cessation of all pathologic symptoms in group C was reduced to 16.2 days as compared with 77.3 days for group B, which was managed more conservatively. This meant that the patients had objective evidence that they were getting definitely well sixty-one days earlier. Watching their own progress in testing, they had definite proof of improvement and absence of cardiac damage. Those who developed some cardiac lesion were able to see how much work they could do and still be comfortable. The beneficial effect of the testing program on the patients' mental state cannot be minimized.

The patients in groups B and C (table 5) made the "fair" score on the progressive test in about the same length of time after testing started; yet the patients in group C had, on the average, 66.8 days of illness whereas those in group B had 33.2 days. This means that the debilitating effect of rheumatic disease is not in proportion to the length of the active pathologic process as determined by present day methods.

Only one man showed additional pathologic valvular changes during the physical training program. He, however, was detected as a "possible" cardiac patient rather early and was excused from all activities. Moreover, there is no proof that he would not have developed the same lesion if he had not participated in physical training.

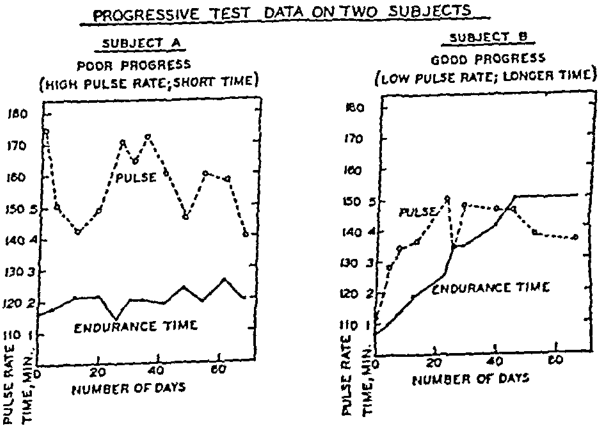

Chart 2.—Progressive test data on 2 subjects.

Observations of the erythrocyte sedimentation rate indicate that the testing, which, on most occasions, was done to the limit of the patient's stepping-up endurance, and the physical training program caused no changes which could be detected by the erythrocyte sedimentation rate. As the result of this observation, the number of erythrocyte sedimentation rate determinations in the later stages of convalescence was reduced to one every two weeks.

As a rule, patients with an erythrocyte sedimentation rate above 15 mm. were excused from the physical training program. Inadvertently, 4 patients with erythrocyte sedimentation rates ranging from 20 to 35 mm. were placed on the ward exercise program. No ill effects were observed, and the erythrocyte sedimentation rates tested two days after the progressive test were normal.

SUMMARY AND CONCLUSIONS

1. Study was conducted on 88 men convalescing from rheumatic fever in an Army Air Forces hospital.
2. Patients participated in a graded program of physical training.
3. The time of beginning and intensification of training were controlled by a series of physical fitness tests.
4. It was found that these tests constituted a simple and safe method of control over physical reconditioning of the patients and furnished objective data when a patient was brought before the Disposition Board for discharge from the hospital.
5. It was found that patients convalescing from rheumatic fever could safely participate in a graded system of physical exercises within two weeks after clinical cessation of the pathologic rheumatic activity.
6. The conventional delay in the beginning of physical reconditioning was reduced from 77.3 days to 16.2 days without causing an increase in the incidence of cardiac damage during six to twelve months of observation.
7. There was no relationship between the abnormal erythrocyte sedimentation rate area during the disease and the time necessary to obtain a "fair" score on the progressive test.

FAULTY MANAGEMENT OF PSYCHIATRIC SYNDROMES SIMULATING ORGANIC DISEASE

A. E. BENNETT, M.D.
Assisted by Bernice Engle, A.M.
Omaha

Twenty years' practice of psychiatry in a general hospital and teaching of medical students have convinced me that the most important problem before our profession is the need for greater interest and more accurate knowledge about psychiatry.

Mistakes in diagnosis and treatment of patients with functional, psychoneurotic, psychosomatic or actual psychotic disorders are so common as gravely to discredit the acumen of the medical profession. These mistakes encourage patients to make the rounds of doctors and even of cultists and quacks, contribute largely to public dissatisfaction with medical care, since benefits of treatment are only temporary, and work heavy financial hardships, which help increase the clamor for some system of socialized medicine.

Recent great medical advances in surgical technics, chemotherapy and metabolic disorders have far surpassed the diagnosis and treatment of our largest group of patients, those with emotional disorders, largely because the general medical man still ignores greatly improved psychiatric knowledge and methods. Surely the psychiatric experience of this war will show medical men the necessity of requiring every graduate to know enough psychiatric medicine at least to recognize an illness as fundamentally psychic and if not himself competent to treat the illness to refer the patient for proper psychiatric treatment. Otherwise the patient is started on an endless round of medical and surgical consultations and treatments which result in eventual complete disorganization of his personality and invalidism, from which the most skilful psychiatrist cannot rescue him.

Presenting this subject so as to attract the attention it deserves is extremely difficult. Despite voluminous literature in recent years, the problem is still inadequately recognized. Physicians are so "organically minded" they fail to heed or learn.

The general physician's poor knowledge of psychiatric principles has long concerned me.[1] In 1936 with Semrad [2] I reviewed 100 cases (73 males and 27 females) of psychoneurosis admitted under diagnoses of various organic diseases to a university hospital. Of the 100 cases 72 had been mistakenly diagnosed as serious organic gastrointestinal disease, toxic hyperthyroidism, organic cerebral disease or disease of other bodily systems, and 179 surgical operations, at least half unnecessary, had been performed. Poor understanding of psychopathology and failure to obtain and evaluate adequate personal histories resulted in these erroneous diagnoses. Of the 100 patients, 70 made definite, lasting improvement under psychotherapeutic treatment.

This paper contains a detailed analysis of 150 cases selected as most typical from 500 similar cases finally treated in the psychiatric department of a general hospital. The study shows how an illness basically psychic was not recognized until it developed into a frank psychiatric syndrome. Multitudinous faulty treatments over many years for symptoms attributed to organic disease in every bodily system have been traced. When at last these patients were treated under a psychiatric discipline, relief close to dramatic in effectiveness often resulted in a short time.

OBSERVATIONS ON RECENT LITERATURE

A complete review of pertinent literature is impossible. Many excellent articles are buried in psychiatric journals and books and never found by the general practitioner or specialist who needs them most. A few recent articles are noted in support of the findings in our study.

Rennie [3] classifies into four groups patients whom the internist treats for true medical disease only to find the same complaints recurring after elimination of all reasonable medical factors: (1) those presenting some difficulty in differential diagnosis, e. g. psychogenic states confused with hyperthyroidism; (2) those with organic diseases unresponsive to therapy because serious underlying personality problems are ignored; (3) a few who call their trouble nervousness; (4) those with physical complaints not traceable to organic causes.

Evaluating the functional element in surgical cases, Donald [4] attributes mistakes in management to improper medical training and excessive emphasis on organic disease. Surgeons belittle or ignore psychic and emotional factors but overvalue laboratory tests. Too literal interpretations of basal metabolism readings or Graham

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Paper published under the auspices of the Section on Nervous and Mental Diseases.

From the A. E. Bennett Neuropsychiatric Research Foundation of the Bishop Clarkson Hospital

1. Bennett, A. E.: The Role of Psychotherapy in General Medicine, J. Iowa State Med. Soc. **25:** 635-638 (Dec.) 1935.
2. Bennett, A. E., and Semrad, E. V.: Common Errors in Diagnosis and Treatment of the Psychoneurotic Patient: A Study of 100 Case Histories, Nebraska State M. J. **21:** 90-92 (March) 1936.
3. Rennie, T. A.: Relation of Psychiatry to Internal Medicine, Bull. Johns Hopkins Hosp. **65:** 265-282, 1939.
4. Donald, J. M.: Evaluating the Functional Element in the Diagnosis and Treatment of Surgical Diseases, South. Surgeon **6:** 288-292 (Aug.) 1937.

Cole tests lead to thyroid and gallbladder operations without relief of symptoms. Chronic appendicitis, migraine, spastic colitis and female pelvic complaints are surgically treated in "vain attempts to relieve symptoms of functional origin."

On the psychiatric side the Menningers[5] have long pointed out what psychologic motives induce both patients and physicians to prefer organ removals and treatments to facing the often complex emotional factors beneath the symptoms. They stress the transient, inconstant relief of such therapies.

The internist Alvarez[6] has frequently pointed out mistaken diagnoses of myxedema, diabetes, syphilis, gallbladder and pelvic disorders due to questionable laboratory findings, x-ray examinations and physical tests. Nervous constipation, not disease per se, characterizes 9 of any 10 cases of colitis, and "dropped colon is another excuse for physical treatment." Recently Allan[7] reported that nervous conditions accounted for illness in 240 of 300 patients complaining of weakness and fatigue. Positive signs to differentiate them from the 60 cases with organic disease were (1) morning fatigue, tapering off later in the day; (2) day to day change without basic physical cause; (3) immediate response to such slow acting medication as thyroid, iron and liver extracts, with (4) instant relapse on withdrawal or medication. Treatment of the psychologic cause was successful in 4 out of 5; the rest he referred to psychiatric attention.

Anxiety states with cardiac symptoms are often badly managed by the general medical profession. The symptoms are precipitated or greatly aggravated, according to Conner,[8] by doctors' comments which suggest organic heart disease or abnormality, by the patient's observation of some dramatic case, by a symptom which the patient labels as cardiac and by some protracted emotional stress. Flanders Dunbar,[9] who has helped popularize the term psychosomatic medicine to cover certain psychoneuroses, studied 1,600 hospital patients (mostly cardiac) with eight syndromes termed organic. These eight types accounted for the longest hospital stays and periods of incapacity. Psychiatric examination revealed emotional difficulties affecting the course of the disease in 80 per cent; and ten to twenty hours of psychotherapeutic attention plus the best present somatic treatment relieved symptoms in all but the most severe cases, Dunbar found.

Equally numerous are anxiety states erroneously diagnosed and treated for thyrotoxicosis. The unfortunate reliance on basal metabolic readings and trial doses of iodine only makes matters worse. Palpitation, lack of well being, loss of appetite, sensations of throat pressure and chilliness and fatigue differentiate the nervous states from borderline hyperthyroidism, Davis[10] reports. Bartlett[11] also emphasizes the rarity of such symptoms in true thyrotoxicosis: "There is no sorrier plight than that of the patient whose subjective symptoms have persisted or increased following thyroidectomy."

PSYCHIATRIC VIEW OF MISTAKES IN DIAGNOSIS AND TREATMENT

Every experienced psychiatrist can differentiate thyroid disease from anxiety state. Careful investigation of the patient's subjective symptoms will elicit characteristic fear or panic reactions—the classic anxiety syndrome. In suspected thyroid cases psychotherapy and prolonged observation should precede medical or surgical treatment; an unnecessary thyroidectomy is a very serious error. Cases of neuroses are always made worse and sometimes incurable by surgery. In one clinic[12] no patient with thyroid overactivity is operated on without prior psychiatric evaluation of emotional factors.

The average medical curriculum, which overemphasizes organic pathologic changes and ignores mental factors as causative of gastrointestinal symptoms, is largely responsible for the many errors of internist and surgeon in gastrointestinal symptomatology. Universally mistreated are all cases of colitis or spastic constipation, invariably of psychogenic origin and symptomatic of anxiety and obsessive tensional or depressed states. Bowel-conscious patients often demand rigid medical and dietary regimens or invite appendectomies, rectal repairs or operations for adhesions. Drugs are only palliative and tend to fixate hypochondriacal ideas. Yet these patients in my experience quickly respond to strict psychiatric therapy and full nutritious diet, with small doses of insulin[13] for needed weight gain and complete avoidance of laxatives. Psychotherapy is preceded by convulsive shock therapy if depressive features are prominent.

Genitourinary complaints in neurotic persons rarely escape fallacious, tragic surgical, manipulative or medical procedures. Male patients are less frequent victims (perhaps because castration is too obvious), although the prostate gland is often blamed and treated for impotence, venereal phobias and other psychosexual problems. Purely psychiatric disorders have recently been attributed to the so-called male menopause. Female patients invariably have hysterectomies with consequent artificial menopause, uterine suspensions and curettements or cervical cauterizations for such psychogenic causes of illness as fear of pregnancy, frigidity and guilt over various psychosexual conflicts. All psychotherapeutic problems are more difficult after the tragedy of artificial menopause or other unneeded radical surgery. Too many symptomless fibroids are removed because of vague fears of uterine cancer. Retroversion never causes psychic disorders nor does uterine suspension ever relieve them, yet patients daily are told that nervousness comes from a displaced uterus—a legacy of the old concept that the wandering uterus causes hysteria.

The wholesale treatment of female patients at the menopause with estrogenic substances is also completely unwarranted except for minor symptomatic relief of actual vasomotor disturbances. In involutional psychoses sex hormones not only do not relieve but often exacerbate the disorder. Recently with Wilbur I reviewed[14] 500 case records and found that convulsive shock therapy and psychotherapy were a near specific cure in 75 cases previously treated by hormones for long periods without benefit.

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[5] Menninger, Karl A.: Polysurgery and Polysurgical Addiction, Psychiat. Quart. 3: 173-199 (April) 1934. Menninger, W. C.: Functional Disorders of the Gastrointestinal Tract: The Gastrointestinal Neuroses, Am. J. Digest. Dis. & Nutrition 4: 447 (Sept.) 1937.

[6] Alvarez, W. C.: What Is Wrong with the Patient Who Feels Tired, Weak and Toxic? New England J. Med. 212: 96-104 (Jan. 17) 1935.

[7] Allan, Frank N.: The Clinical Management of Weakness and Fatigue, J. A. M. A. 127: 957-960 (April 14) 1945.

[8] Conner, L. A.: The Psychic Factors in Cardiac Disorders, J. A. M. A. 94: 447-452 (Feb. 15) 1930.

[9] Dunbar, Flanders: Psychosomatic Diagnosis, New York, Paul B. Hoeber, 1943.

[10] Davis, Herbert: Borderline Hyperthyroidism, or Is It Just Nervousness? Nebraska State J. Med. 27: 311-313 (Sept.) 1942.

[11] Bartlett, Willard: Differential Conditions of Toxic Goiter from Conditions Simulating It, Mississippi Valley M. J. 63: 96-100 (May) 1941.

[12] Hannett, F., and Gitelson, M.: What Constitutes a Psychiatric Problem in General Practice? Illinois M. J. 76: 468-475 (Nov.) 1939.

[13] Bennett, A. E., and Semrad, E. V.: The Value of Insulin Treatment in Undernourished Psychiatric Patients, Am. J. Psychiat. 92: 1425-1431 (May) 1936.

[14] Bennett, A. E., and Wilbur, C. B.: Convulsive Shock Therapy in Involutional States After Complete Failure with Previous Estrogen Treatment, Am. J. M. Sc. 208: 170-176 (Aug.) 1944.

The common excessive use of sedation by most physicians to relieve nervous disorders must be sharply condemned. Frequently abuse of these drugs by emotionally unstable patients leads to toxic encephalitis and other severe delirious reactions. In our psychiatric department sedatives are not used except the first night of admission. Barbiturates, bromides or other anesthetic agents do not relieve personality disorders and are simply a form of chemical restraint; their use betrays the physician's ignorance and inability to cope scientifically with personality diseases.

PAST MEDICAL AND SURGICAL HISTORY OF 150 CASES

Of the 150 patients in this study, 121 were female, 29 male. Previous medical and surgical treatments are grouped as far as possible into systems according to symptoms and diagnoses. A large proportion of treatments were illogical, ill advised and often detrimental to the basic personality problem.

121 Female Cases

1. *Gastrointestinal System.*—Thirty-six patients had had extensive medical and dietary therapy or prolonged diagnostic studies for varied types of colitis or spastic constipation, 7 for "intestinal flu," 10 for hemorrhoids or other rectal conditions and 50 for gastric complaints, ulcers, acid stomach, nervous indigestion, gallbladder disease or cancer phobias. A total of 111 patients, many treated for more than one condition, had thus been treated for gastrointestinal disease instead of nervous disorders.

2. *Endocrine System.*—Suspected endocrine disorders were next in frequency. For pelvic complaints 53 women received diagnosis and treatment (mostly hormones), 21 for thyroid disease and 14 had extensive liver, iron or other glandular injections for what were actually emotional symptoms. Of the 121 cases, 88 were at some time falsely considered to be endocrine disorders.

3. *Genitourinary System.*—Sixteen patients were medically treated for such pelvic diseases as tumor, cervical ulcerations, vaginal infections or uterine displacements and 15 for urinary frequency, floating kidney or bladder symptoms; a total of 31 patients (not including surgical cases) erroneously treated for disease of this tract, although the psychiatric survey and response to therapy clearly showed the psychogenic basis of their symptoms.

4. *Cardiovascular System.*—Thirty-nine patients had extensive diagnosis or actual treatment for organic heart disease, cardiac irregularities and high or low blood pressure states as causes of their nervous difficulties.

5. *Eye, Nose, Throat and Mouth.*—Five women were treated for ocular disorders and 6 had full dental extractions to relieve nervousness; despite incomplete data on other treatments (not including surgery) their numbers are great, as I have shown elsewhere.[15]

6. *Miscellaneous Medical and Cultist Therapies.*—Fifty-seven patients had long periods of bed rest, often in hospitals, and extensive doses of vitamins or tonics for vague infections such as arthritis, suspected tuberculosis or obscure focal involvements; 31 patients got excessive sedation, of whom 3 had chronic bromide intoxication, as shown clinically and by bromide blood level estimations; 58 had gone to cultists, mostly chiropractors, osteopaths, physiotherapists and Christian scientists, while only 17 of the entire 121 women had had previous psychiatric diagnosis or treatment.

7. *Surgical Treatment.*—In the past histories of the 121 women 205 operations were found; 159 were major —84 pelvic, 40 appendectomies, 11 gallbladder, 16 thyroids, 5 postoperative adhesions and 3 kidney; 46 were minor—21 rectal, 24 tonsils and nasal sinuses and 1 for varicose veins. As compared with medical therapy it was harder to determine from the standpoint of organic pathology how many of these operations were necessary. But a large percentage were accepted by patients with the understanding or at least hope of relief from nervousness; certainly none were indicated from this point of view.

29 Male Cases

1. *Gastrointestinal System.*—Fifty-five instances of prior medical or dietary treatments for bowel, stomach or gallbladder complaints were listed. Several patients had undergone varied treatment programs for what was actually psychiatric illness.

Table 1.—*Summary of Therapies Prior to Psychiatry*

	Total Number of Medical Treatments	Total Number of Surgical Treatments	Total Number of Treatments by Cultists and Others	Total Number of of All Treatment
Females (121)......	368	205	58	631
Males (29)..........	128	39	13	170
Total (150).......	496	244	71	811

2. *Genitourinary System.*—Seven men were treated for prostatic or local genital or bladder complaints, although the etiology was a venereal disease phobia or psychosexual conflict.

3. *Endocrine System.*—Twelve patients had sex hormones, thyroid or other hormonal injections for symptoms considered of endocrine origin but actually related to sexual maladjustments.

4. *Cardiovascular System.*—Twelve patients were treated for organic heart disease, 6 with long rest periods and digitalis therapy.

5. *Miscellaneous.*—Sixteen men were treated for headaches or vague nervous complaints referred to eyes, nose, throat and mouth; 22 patients were given rest periods, tonics or serum injections for rheumatism, tuberculosis and other supposed infections; 2 patients had long periods of treatment in a Veterans Administration facility; 8 patients had excessive sedation without benefit to the nervous symptoms, and 13 men at various times received extensive treatments from cultists.

6. *Surgical Treatment.*—Thirty-nine surgical operations were performed on the 29 men, fourteen being major and twenty-five minor procedures. The former included appendectomies, cholecystectomies or stomach operations; the minor were nasal, tonsil or rectal operations. Again, one can only surmise how many were necessary, but certainly none were indicated to relieve a psychiatric disorder.

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[15] Bennett, A. E.: Neurologic Problems in Ophthalmology and in Rhino-Otolaryngology, Arch. Otolaryng. **18**: 260-280 (Sept.) 1933.

Psychiatric Study of the 150 Cases

Diagnoses of the 121 cases have been classified as shown in table 2.

TREATMENT PROCEDURES AND RESULTS

Treatment of these cases was carried out under a strict psychiatric regimen. A detailed psychiatric history with personality background covering lifetime data was obtained from both the patient and the closest informant. Complete physical, neurologic and laboratory investigations included a special assessment of nutritional factors. Routine psychiatric management and specific procedures, depending on the individual personal factors, were aided by psychiatric nursing and occupational and recreational therapy under specially trained personnel. Psychotherapy and bibliotherapy were preceded in cases showing predominant depressive symptomatology with curare electroshock treatments.

The average hospital stay was about five weeks; the minimum was four and the maximum eight weeks in cases with shock therapy. During the active treatment phase complete isolation of patients from family and friends is routine, but outside contacts are permitted during convalescence.

TABLE 2.—*Classification of Diagnoses*

	Women	Men
Neuroses		
Anxiety (psychoneurotic) depression	12	3
Psychoneurosis, anxiety states and hysteria	29	6
Chronic invalidism, with pronounced hypochondriasis	3	2
Obsession-compulsion	2	..
Psychoses		
Reactive depression	19	7
Manic depression	15	10
Involutional melancholia	38	1
Schizophrenia	3	..
Total	121	29

TABLE 3.—*Results of Psychiatric Treatment in 150 Cases* *

	Women	Men	Total
	70	10	80
	18	10	28
	18	4	22
Unimproved	7	4	11
Unknown	8	1	9

* Because of limitation of space, illustrative case histories have been omitted. These are included in the reprints, which will be sent to all those interested.

Results of treatment, one must remember, concern the worst examples and not the average run of cases, since from 500 consecutive psychiatric admissions 150 were purposely selected for more detailed study in order to typify the grosser examples of faulty management in what were essentially mental illnesses.

Of the 150 cases 70 women and 10 men after follow-up reports over one to eight years were classified as full recoveries, with good insight into their psychogenic disorders and with sustained efficiency unimpaired by neurotic conflicts masked as somatic complaints. They did not begin again to canvass the round of therapies. Social recoveries included 18 women and 10 men; these were able to adjust fairly well but were still handicapped by such emotional factors as residual anxiety or emotional depression. In many instances they continued to be problems for family and friends. Recurrent attacks or relapses were noted in 18 women and 4 men, of whom 14 later made a fairly good readjustment. The 7 unimproved women and 4 men were failures; results are unknown in 8 women and 1 man.

The psychiatric patient is often given unscientific advice. One woman in a deep depression was told by a diagnostic clinic "Go home and forget yourself or take a trip." A vacation was advised for a manic depressive man unable to work for many months. A woman with cancer phobia and obsessive ideas of orderliness was given a diet for arthritis, another for gallbladder and a smooth diet for spastic colon "that made three sheets and when I put them together," she said, "there was nothing left for me to eat and I got panicky." In a woman with involutional melancholia the pudic nerve was blocked with alcohol to relieve masturbation; a necrotic slough of the vulva resulted. For a $150 fee a psychoneuritic depressed patient had "the clitoris unhooded to relieve partial frigidity."

Frequently we read reports from clinics and other diagnostic examinations in which all tests are normal. The closest the illness is described as psychiatric is to call it nervousness, but the patient is told nothing of psychiatric treatment.

Our information from patients and relatives emphasized how after each operation the patient got a little better; then, after the hysterectomies, "the same aches and pains returned." Hormone injections, tonsillectomies, bed rest or violet ray therapy made the patient "feel better and take a little more interest," but in a few months the patient was again despondent.

The effectiveness of psychiatric treatment in our cases was shown by the degree of lasting insight and continued rapport. Patients reported better efficiency in work, more consistent good health and enjoyment of life, since they were able to deal understandingly with their symptoms. Many expressed deep gratefulness for learning how to control their nervous spells, how to adjust to disappointments and misfortunes and how to cope directly with the mechanisms and tensions which had caused their symptoms.

PSYCHIATRY AND MEDICAL EDUCATION

Fundamentally the mistakes of diagnosis and treatment that have just been discussed are due to the failure of psychiatric education. The war has helped physicians to realize this lack. Medical officers have found that their greatest hospital problem is the functionally ill soldier with often additional organic factors —the so-called psychosomatic syndrome. Undoubtedly many medical officers will return to civilian practice with a keener appreciation of estimating personality factors along with physical signs in order to arrive at a complete diagnosis of a disability. Most of the older doctors cannot be changed in their mistaken concept of psychiatric medicine.

Before a new program can function, medical college teaching and curriculums which emphasize the organic approach and blind the student to all problems not readily explained in terms of bodily disturbances, anatomic anomalies or infections must be reformed. The negative attitude to a psychologic approach must go. The medical curriculum should begin, preferably in the premedical stage, to emphasize the relationship of human personality, constitutional makeup and hereditary pattern to development of disease in the individual. The freshman medical year should link organic anatomy with so-called normal personality (psychobiology), including the influence of childhood training on adult patterns. Psychopathology (including the minor psychoses, as important causes of human maladjustment) should accompany organic pathology and physiology in the sophomore year. Students must learn an accurate method of psychiatric history taking. Perfecting a satisfactory approach to the patient's personal conflicts and understanding his attitudes are probably the most difficult and neglected phase of medical instruction. Whitehorn[16] has supplied an admirable guide for comprehensive history taking, of use to all medical practitioners.

In the junior year should come intensive clinical clerk service, with ward contacts and outpatient studies of the common psychoneurotic reactions, especially psychosomatic syndromes, in order to apply technics learned in the sophomore year. This leaves the senior year for advanced psychotic disabilities and finally for a systematic course in elementary psychotherapy with individual case studies by each student supervised by the chief of service in seminar discussions.

Every accredited internship should require a reasonable period of training and experience in the management of psychiatric problems.

Students must learn to make positive diagnoses of neurotic illness on the evidence of emotional signs; not as at present after long and often costly procedures to exclude organic signs.[17] They must also learn that neurotic persons may have organic pathologic changes and the disabling factors must be evaluated as organic, functional or mixed. That is, the student must learn to treat both the personality and the somatic disorder.

All this means that medical schools must require better psychiatric teaching in order to attract good students and overcome the general antagonism against psychiatric medicine. Psychiatric terminology must be simplified where possible and made understandable; the student must be taught to think in terms of feelings as well as mentations. Most necessary is instruction in the art of mental healing—the affective varied methods of concrete therapy in psychiatry—with proof that the vast majority of patients can be rehabilitated and restored to usefulness. All students respond with keen interest to successful therapy. Too many have outdated notions that psychiatry deals only with dilapidated custodial cases.[18]

Above all, medical men must learn that psychoneuroses and psychoses are mental illnesses not secondary to physical disease and that no form of rest cure, drug therapy, surgery or any approach directed to treating an emotional problem at a physical level is scientific. The sick man becomes the "forgotten man" in face of the battery of diagnostic and therapeutic tests, like a guinea pig in physiologic experiments. Medicine is still an art but is to be applied scientifically. The doctor-patient relationship has been made a better tool by recent scientific discoveries. On this new scientific basis the art of the practice of medicine must be reintroduced. The sick man's personality must be judged along with the physical and laboratory data. When the evidence points to emotional and social maladjustment we must treat mental illness and thus avoid discredit to the profession.

The problem is far too great for psychiatric specialists alone. No man in medicine is wise enough to comprehend what he daily beholds. The medical practitioner of the future will have to become psychiatrically minded.

SUMMARY

Faulty medical and/or surgical treatments were compared with modern psychiatric treatment in a detailed study of 150 psychoneurotic and psychotic patients. This study and pertinent citations from the literature indicate that the general medical profession fails to recognize and treat properly mental illness. The result is a tremendous army of maladjusted persons going from doctor to doctor and receiving illogical medical and surgical therapies that only aggravate their personality problems.

Proper psychiatric treatment is shown to result in social rehabilitation of the great majority of patients. Unfortunately, years of invalidism usually precede such treatment because of the bad professional attitude toward psychiatry.

The fundamental cause of these mistakes is failure in medical schools to emphasize properly pyschiatric education. Correction of this defect necessitates a complete change in medical curriculums and teaching. The entire problem is too great for psychiatrists alone; all physicians of the future will have to practice some psychiatric medicine.

ABSTRACT OF DISCUSSION

Dr. Walter C. Alvarez, Rochester, Minn.: This is a valuable paper with a message for every practicing physician. No internist with psychiatric interest can help feeling distressed as day after day he sees the unfortunate results of the handling of patients with neuroses and psychoses by physicians who took their diagnoses ready made from the reports of laboratory girls and roentgenologists and by surgeons who expected to make a diagnosis after opening the abdomen. I agree with Dr. Bennett and Mrs. Engle that if "organically minded" physicians are ever to be taught to recognize and properly treat the neuroses and psychoses the new gospel must be preached so vividly and interestingly that many will stop to listen and to read. That weird jargon which so many psychiatrists affect will never do the trick. The writers will have to use short words and homely speech, and they will have to publish often in nonpsychiatric journals. Any good physician will sense that something is nervously wrong with a psychoneurotic patient, but unfortunately few know the common neuroses and psychoses so well that they dare diagnose them positively from the history. This leads often to disaster because the minute some laboratory girl says that the patient's blood weakly agglutinates Brucella abortus or the roentgenologist says that the appendix looks diseased the really correct hunch is abandoned, and a wrong diagnosis is made and treated. A statement of Dr. Bennett and Mrs. Engle which delights me is that the psychoneuroses are mental illnesses *"not secondary to physical disease"* (italics mine). I assume that the authors are thinking of physical disease below the neck. I long have begged assistants to remember that patients have a brain, and that it has many diseases and, certainly, many diseases all its own. Today we physicians are so un-brain-minded that when a man drops dead every one says he had a heart attack. That he might just as well have had a stroke rarely occurs to any one. I mention this just to show how huge a blind spot we physicians have when it comes to disease of the nervous system.

Dr. R. P. Mackay, Chicago: There can be no doubt that the misdiagnosis and mismanagement of the so-called functionally ill patient is the medical scandal of the day. This well reasoned study properly emphasizes what is only too obvious to every thoughtful observer. It is literally true that most of our patients are improperly handled, suffer needless prolongation of their illnesses and often fall into the hands of ignorant quacks. I agree that medical education is partly to blame. Other reasons, however, are inescapable. The most important is the laziness of the physician who neglects the laborious but indispensable taking of the personal and social history. This must be done by the doctor himself; it dare not be assigned to a nurse or junior assistant. Furthermore, the physician must

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16. Whitehorn, J. C.: Guide to Interviewing and Clinical Personality Study, Arch. Neurol. & Psychiat. **52**: 197-216 (Sept.) 1944.

17. Zilboorg, Gregory: Some Physical Aspects of Mental Disease, New York State M. J. **35**: 707 (July 15) 1935. Fremont-Smith, M. Psychoneurosis—A Dangerous Diagnosis, Internat. Clin. **2**: 187 (June) 1937.

18. Menninger Foundation Report and personal study of Karl Menninger. Annual Report, Topeka, 1944.

talk less and listen more and must watch for the patient's subtle reactions as he is quizzed. He must elicit the outlines of his life story, his work, his play, his ambitions and his failures, his sexual and emotional appetites and his dissatisfactions. These are quite as important as the chronologic narrative of his symptoms. Next to laziness is the physician's lack of imagination. Blinded by a worship of chemical and technical procedures (which inordinately increase the cost of medical care) he forgets that patients are people who in infinitely complex ways become entangled in the emotional snarls of life. It is not enough to know that a woman has palpitation; it is necessary to discover that, for example, she has it during her husband's absence and to imagine what disturbing desires she may have, from which his presence protects her. Human sympathy is the good doctor's indispensable attribute. He can never win confidences if he is impatient or disinterested or in a hurry to go golfing or hostile because the symptoms are "ridiculous and unreasonable." There is nothing unreasonable in medicine. Tolerance and sympathy establish that rapport which reveals the diagnosis and actually works the cure. These things—industry, imagination and sympathy—with a hunger for that truth which cannot be seen in the test tube or x-ray film must be added to a sound education in psychology. Thus equipped, the practitioner becomes a wise physician who understands human beings and who, furthermore, is a human being himself.

Dr. Karl A. Menninger, Topeka, Kan.: Dr. Bennett and Mrs. Engle have done a very courageous thing. The information is known not only to psychiatrists but to many medical men and surgeons who have been just as distressed about it as any one. What to do about it is not so well known, and many will be particularly grateful for the practical and concrete suggestions. Dr. Bennett and Mrs. Engle have documented the declaration that many patients are being treated ineffectually and in some instances definitely harmfully through ignorance on the part of members of our profession of the nature of psychiatric illness. The fact, for example, that 150 psychiatric patients should have had a total of 496 courses of medical treatment and 244 courses of surgical treatment (to say nothing of treatments by cultists and others) prior to the time that their illnesses were diagnosticated as psychiatric in nature is a startling and disturbing report. The fact that a consecutive series of patients consulting one representative psychiatric clinic had averaged more than two operations each prior to their coming for psychiatric treatment is more evidence in the same direction. Serious and alarming as such statistical evidence is, it would be unfair to conclude that all of these patients had been incorrectly diagnosed or incorrectly treated. The authors themselves point out that many of these patients demanded the type of treatment they received, and this same point has been made by myself and others. The fact that the treatment given prior to the establishment of a psychiatric diagnosis and the institution of psychiatric treatment did not cure them, whereas the latter did cure them, is eloquent evidence of this. It is indeed high time that the medical profession came to recognize more generally the simple fact that the first, and often the chief, manifestation of psychiatric illness may be a somatic symptom or sign. Dr. Bennett and Mrs. Engle have submitted evidence of something which remains corridor and cloakroom and convention hall talk among psychiatrists and which is rarely brought out into the open in medical literature. Psychiatric treatment is still considered by too many medical men as a luxury, and psychiatric principles as ephemeral and inconsequential. Even the plain hardboiled facts of military statistics have not convinced them. An article like this, with statistics of previous treatment, statistics of results after psychiatric treatment and case history illustrations is hard evidence to contradict. As a fellow psychiatrist, I want to register my admiration of the courage and directness of the authors even though I may have some slight misgivings about the excellent recovery rate reported as a result of psychiatric treatment, since it is certainly better than anything that I can report from my own experience.

Dr. A. E. Bennett, Omaha: I am pleased that the discussers agree with us as to the fundamental importance of faulty diagnosis and mismanagement of psychiatric illnesses. I particularly like Dr. Alvarez's emphasis that more psychiatrists must speak and write in simple, vivid language for nonpsychiatric practitioners. In this field Dr. Alvarez has written widely and Dr. Menninger has rendered great service both by his books and articles and by his clear, factual talks to medical students in many Eastern and Midwestern medical schools. Of course, some scientific terms will not be clear to the specialist in another field, but these terms can be explained when used and reduced to a minimum. With Dr. Mackay I agree that the physician's laziness and unimaginativeness account for improper handling of many patients, especially in history taking. I should still lay this blame on medical education because I believe that few physicians can be induced to change their methods after they have been trained in medical school to rely on laboratory and technical findings only. In documenting our cases I realized the danger of trying to evaluate too strictly the patients' past treatments. However, it is clear that many somatic conditions are overstressed and treatments given with assurance or at least hope of relief from disorders which physical procedures cannot benefit. In tabulating our recoveries after psychiatric therapy we should emphasize that we were concerned mainly with the patients' readjustment to normal work and social contacts. From that angle about half made good recoveries. Many were true depressions that respond well to shock therapy. Those considered as social recoveries are not changed basically in their personality and may be subject to periodic recurrences of their illnesses.

VITAMIN D INTOXICATION WITH METASTATIC CALCIFICATION

JERE M. BAUER, M.D.
Instructor in Medicine, University of Michigan Medical School
and
RICHARD H. FREYBERG, M.D.
Associate Professor of Clinical Medicine, Cornell University Medical College; Director, Department of Internal Medicine, Hospital for Special Surgery
New York

The fact that irradiated ergosterol in sufficient dosage may produce toxic effects in both experimental animals and man was recognized soon after the discovery by Hess, Weinstock and Helman [1] and by Steenbock and Black [2] that the irradiated sterols possessed antirachitic properties. It has been demonstrated repeatedly that experimental animals can be killed by sufficiently large doses of this product and that the outstanding pathologic finding in these animals is diffuse metastatic calcification involving chiefly the arterial vascular system and the kidneys. That these advanced changes can also occur in the human being and lead to death is not as well known. Because of the increasing tendency for the use of large doses of vitamin D in the treatment of a variety of conditions, it was felt worth while to report a fatal case resulting from the use of this drug and to review 5 previously reported cases of metastatic calcification in man resulting from its use.

Although the number of cases in the literature in which vitamin D may have played a part in the production of abnormal calcification or death exceeds this number, only 5 of the cases were considered to be sufficiently clearcut to warrant their special consideration. In these cases postmortem examination was performed and no other obvious explanation for the abnormal calcification was determined. In 6 additional cases vitamin D intoxication could be considered to play a part. Of those cases the diagnosis in 2 [3] was based solely on abnormal vascular calcification detected by roentgenographic examination. Two cases[4] showed changes in the postmortem examination that were considered to be due to intoxication with cod liver oil, but there was no pathologic calcification. The 2 remaining cases are of special interest in this study because the condition occurred in adults; these will be mentioned in more detail. A man aged 59 with Paget's disease who was the subject of a report by Wells and Holley[5] was given 5 million U. S. P. units of viosterol in fifteen days. He died of pneumonia two months later and the postmortem examination showed extensive metastatic calcification in the pulmonary alveolar walls, pulmonary veins, renal tubules, renal arteries, endocardium, stomach and skin. The authors considered that the massive vitamin D administration was in part responsible for the pathologic calcification but felt that in Paget's disease there might be also an increased ease of mobilization of calcium from the bone and more tendency for deposition to occur in the tissues. A second case in which vitamin D intoxication seemed to play a part in the death of an adult is mentioned by Kerr in discussing a paper by Freyberg, Grant and Robb[6] in 1936. He reported the case of an elderly physician who by mistake had taken 2.3 million units of irradiated ergosterol daily for eighteen days and died with the typical symptoms of vitamin D intoxication. There is no report of postmortem findings, so that it is not known whether metastatic calcification occurred.

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[1] Hess, A. F.; Weinstock, M., and Helman, F. D.: The Antirachitic Value of Irradiated Phytosterol and Cholesterol, J. Biol. Chem. **63**: 305-308, 1925.

[2] Steenbock, H., and Black, A.: Fat Soluble Vitamins: XXIII. The Induction of Growth Promoting and Calcifying Properties in Fats and Their Unsaponifiable Constituents by Exposure to Light, J. Biol. Chem. **64**: 263-298, 1925.

[3] Eisler, F.: Schwere Gefäszveränderungen bei einem 7 jähr Mädchen nach übermäszigem Gebrauch eines Ergoster-inpräparates, Klin. Wchnschr. **9**: 1846, 1930. Thomasen, E.: Arterienverkalkung bei einem 8 jähren Knaben. Nach Behandlung mit Vitamin D? Acta med. Scandinav. **93**: 505-511, 1937.

Of the 5 previously reported cases of vitamin D intoxication characterized by metastatic calcification (as shown in the table) this was considered to be the primary cause of death in 4. In the fifth[7] the pathologic findings due to the vitamin D intoxication were considered to be incidental.

In 1929 Putschar[8] reported that a boy aged 5½ months was given 6 drops of Vigantol daily from the tenth week after birth until death at 163 days of age. This represents a daily dose of 2.2 mg. of irradiated ergosterol per day, or a total of 210 mg. This amount is less than is usually recommended for the treatment of rickets. Between the fiftieth and the seventieth day of Vigantol administration leukocytes and traces of albumin appeared in the urine. The child developed hyperpyrexia and died. Postmortem examination showed calcium deposits in the kidneys, chiefly in the renal tubular epithelium and basement membrane and to a lesser extent in the lumen of the tubules of the medulla close to the cortex. No other organs showed pathologic calcification.

Thatcher[9] reported 2 cases. The first (1931) was that of a white boy aged 18 months who had been fed an inadequate diet. For five months prior to his hospital admission he had been given 4 teaspoons of irradiated ergosterol emulsion per day, an amount of vitamin D said to be about twice the "curative" dose (the actual potency of the drug was not given). This treatment had been administered during the summer months when sunlight was abundant. The complaints on admission were weakness, anorexia and refusal to take food. The urine contained erythrocytes, leukocytes, occasional granular casts and a "moderate amount" of albumin. The patient became dull and apathetic, had hyperpnea and increasing fever and vomited several times. The blood urea reached 90 mg. per hundred cubic centimeters before death occurred twelve days after admission to the hospital. There was diffuse deposition of calcium in the medullary portion of the kidney, chiefly in the lumen of the collecting tubules. No calcium was found in the myocardium. The aorta and other arteries showed no macroscopic calcium deposits but were not examined microscopically.

Thatcher's second patient (1936), a boy aged 11½ months, was admitted to the hospital because of failure to gain weight, asthenia, anorexia and constipation. The milk intake of the infant had been made as adequate as possible and he had been exposed to sunlight during the summer months. Three weeks before death he had been given two treatments with an ultraviolet lamp. In addition he was given 1 to 2 Gm. of cod liver oil containing 200 international units of vitamin D per gram three times a day on many days. The vitamin D dosage is rather indefinite but seems to have been between 400 and 1,200 international units per day for at least four months. The patient continued ill, convulsions developed and he died. The urine contained only a trace of albumin and 4 leukocytes per high power field but no erythrocytes or casts. At postmortem examination calcium could be seen grossly as a line of gray, granular material deposited at the base of the medullary pyramids. Microscopic examination showed most of the calcium to be in the lumen of the tubules, but there was some calcification of the cells lining the tubules and a few glomeruli contained small calcium deposits. There was no calcium in the heart, arteries or other organs.

In 1939 Ross and Williams[10] described 4 cases in infants showing toxic symptoms from large doses of vitamin D. In this group there were two deaths and one autopsy. The exact age of the infant on whom the postmortem examination was done is not recorded; the ages of the group ranged from 8 to 14 months. The amount of irradiated ergosterol given is likewise not definitely known but was between 20,000 and 40,000 international units per day of the proprietary preparation "Ostogen." The child on whom a postmortem examination was performed was one of twins who had received large doses of this preparation. Both children had bronchopneumonia at the time of death. The postmortem examination revealed widespread metastatic calcification. There was calcification of the inner layer of the media of the arteries in the cardiac muscle and in the kidneys, especially in the tubules. Calcium was deposited in the lining of the pulmonary alveoli and bronchi, in the stomach muscularis and in the basal portion of the gastric mucosa cells. It was considered that the twin likewise suffered from vitamin D intoxication; roentgenograms of the long bones substantiated this opinion.

Wolf[7] attempted to determine the level of toxic dosage of an electrically activated vitamin D preparation[11] by administering massive doses to a 4 months old infant afflicted with spina bifida and a meningomyelocele. A dose of this preparation consisting of 300,000 U. S. P. units of vitamin D was given in milk daily for two weeks. Regurgitation occurred on three occasions, but it was estimated that 3,500,000 U. S. P. units was retained during the period. The patient had diarrhea on the seventh day of administration; he died following a diagnostic cisternal puncture six weeks after completion of therapy. Postmortem examination showed deposits of calcium in the renal tubules, but none was found in other organs or vessels.

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[4] Malmberg, M.: Some Histologic Organic Changes After Cod Liver Oil Medication, Acta pædiat 8: 364-374, 1929

[5] Wells, H. G, and Holley, S. W.: Metastatic Calcification in Osteitis Deformans, Arch Path. **34**: 435-442 (Aug) 1942.

[6] Freyberg, R. H.; Grant, R. L., and Robb, M. A.: Hypoparathyroidism: The Treatment of Chronic Cases, J. A. M. A. **107**: 1769 1775 (Nov. 28) 1936

[7] Wolf, I J.: Safety of Large Doses of Vitamin D in the Prevention and Treatment of Rickets in Infancy, J. Pediat. **22**: 707-718, 1943.

[8] Putschar, W.: Ueber Vigantolschädigung der Niere bei einem Kinde, Ztschr. f. Kinderh. **48**: 269 281, 1929.

[9] Thatcher, L.: Hypervitaminosis D with Report of a Fatal Case in a Child, Edinburgh M. J. **38**: 457-467, 1931; Hypervitaminosis D, Lancet **1**: 20-22, 1936.

[10] Ross, S G, and Williams, W. E.: Vitamin D Intoxication in Infancy, Am J. Dis Child. **58**: 1142 1143 (Nov.) 1939.

[11] Prepared by the Whittier process.

The author considered the toxic dose of this preparation to be 85,000 U. S. P. units per kilogram of body weight daily and felt that the drug was safe to use because of the high dosage required to produce the toxic effects. With the large dose used, abnormal calcification in the kidneys did occur from use of this electrically activated ergosterol product.

SUMMARY OF AUTHOR'S CASE

History.—A white married woman aged 29 was first admitted to the University Hospital in January 1940 complaining of attacks of diarrhea, with six to eight liquid stools per day, generalized malaise, occipital headache and a feeling of "tightness" between the eyes. With some attacks there was pain in the upper back and neck and a sensation of stiffness in the neck. These attacks had occurred at intervals of four to six weeks over the previous three years. Each attack lasted four to five days. There was some nausea at times but no vomiting. She had been considered to have a peptic ulcer by her local physician and in January 1938 had been placed on a bland diet with six feedings daily. Because of this restricted diet she took vitamin supplements consisting of "irradiated yeast tablets," vitamin E and vitamin C at least 100 mg. per day. The doses and the duration of this vitamin medication are unknown. The patient had other complaints for which no adequate explanation could be offered at the time. These consisted in "twitching in her legs" and shooting pains in the fingers and toes and on the right side of the body. Physical examination at that time revealed no abnormalities. The sigmoidoscope showed a normal bowel. The urine examination was normal except for a trace of albumin; feces were normal. The Kahn flocculation test for syphilis was negative. The basal metabolic rate was minus 1 per cent. The routine blood examination was negative. The patient was discharged after a period of five days' hospitalization without a diagnosis having been made. Because of the multiplicity of apparently unrelated complaints and normal physical findings and laboratory results, the possibility of a functional etiology was considered but the attending physician did not feel justified in explaining the illness on this basis, believing that some undetected organic disease may have existed. He thought that possibly an allergic process may have been the basis for her complaints, for she gave a history of urticaria from chocolate and wheat.

In January 1943, at the age of 32 years, she was again admitted to the medical service complaining of aching pains in the joints and in the extremities between the joints. Since her previous hospitalization she had not had diarrhea, but for one month in February 1942 she had vomited three to four times each day. During this period it was reported that the hemoglobin was reduced from 100 per cent to 60 per cent. She had continued to have severe headaches, nasal obstruction and postnasal drip. For two years there had been a persistent hacking cough productive of a small amount of greenish yellow sputum which had been blood tinged a year before and on several occasions during the week before admission. There had been mild dyspnea even at rest, and attacks of palpitation had been frequent during the preceding year. Three months prior to admission she rather rapidly became worse and was confined to bed. Swelling of the knees and ankles developed, and later there was swelling of both lower extremities below the knees. Nodules appeared along the extensor tendons of the fingers, on the pressure areas of the ulna, over the ischial tuberosities and the sacroiliac regions and along the tendons of the hamstrings. Contractures of each fourth and fifth finger and thickening of the palms developed. There had been aching pains in all extremities, with weakness and ease of fatigue. Anorexia was a prominent symptom; the patient had lost 15 to 20 pounds (7 to 9 Kg.) of weight during the previous four months. Considerable paresthesia of the fingers and toes had been present for three weeks. For two weeks there had been severe insomnia and disturbing dreams. For a few days there had been nocturia of one to four times and burning pain on urination.

For a year before admission the patient had been taking a concentrated preparation of vitamin D marketed under the name of "Vitamin D (Plasta-Seal)."[12] The manufacturers stated that each gelatin capsule contained 50,000 international units of vitamin D prepared from ergosterol by irradiation with ultraviolet light supposedly to the point of production of calciferol with "negligible amounts of other irradiation products." The patient had taken at least two capsules (100,000 international units of vitamin D) a day for one year prior to admission, and from about six months until three months prior to admission she took as many as ten capsules (500,000 international units of vitamin D) a day. She had also usually taken two ordinary vitamin D pearls per day. About a quart of milk was consumed daily, and 0.65 Gm. of calcium lactate was administered three times daily. (The monthly cost for vitamin medication totaled about $30.)

Physical Examination.—The patient appeared acutely ill and to have been in poor health for a long while. She was dyspneic at rest and was constantly moving about in bed. There was

Vitamin D Intoxication, with Metastatic Calcification

Case	Age	Sex	Preparation	Dose per Day	Duration	Season	Menstruum	Major Pathologic Changes
Putschar (1929)	5½ mo.	♂	"Vigantol"	6 drops (2.2 mg. I. E.)	96 days	Not stated	Not stated	Calcification in the tubular epithelium, basement membrane and interstitial tissue of the kidneys; none elsewhere
Thatcher (1931)	18 mo.	♂	Irradiated ergosterol emulsion	16 cc. (twice the "curative" dose)	5 mo.	Summer	Not stated	Calcification chiefly in the lumen of the collecting tubules of the kidneys; none elsewhere
Thatcher (1936)	11½ mo.	♂	Cod liver oil (200 I. U. per Gm.)	400 to 1,200 I. U.	4 mo.	Summer	Not stated	Calcification in the lumen and in the cells of the collecting tubules of the kidneys; none elsewhere
Ross and Williams* (1939)	8-14 mo.	♂	"Ostogen" (irradiated ergosterol, 60,000 I. U. per Gm.)	20,000 to 40,000 I. U.	"Several months"	Not stated	Not stated	Calcification in the kidneys, stomach, lungs and inner layer of the media of the arteries
Wolff† (1943)	4 mo.	♂	"Ertron"	300,000 I. U.	14 days	Summer	Milk	Calcium deposits in the renal tubules
Bauer and Freyberg (1946)	32 yrs.	♀	"Vitamin D Plasta seal"	100,000 to 500,000 I. U.	At least 1 yr.	Summer and winter	Water	Calcification in the kidneys, heart and arterial vascular system

* This is 1 of 4 cases described as a group, and the data are not definite.
† Calcification in this case was reported as an incidental finding and was not considered to be the immediate cause of death.

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[12] Dispensed by the U. S. Standard Products Company, Woolworth, Wis.

moderate pallor, and a few scattered areas of brownish discoloration of the skin were present. The teeth were in a good state of repair. There was moderate distention of the cervical veins. The left lung was clear. Bronchial breathing and numerous crackling inspiratory rales were heard over the middle third of the right chest. The heart size was normal. A diastolic gallop rhythm was present. One observer reported a rough diastolic murmur at the apex, but this was not detected on later examinations. The liver was just palpable and was not tender. There was mild epigastric tenderness. Large, firm nodules and conglomerate masses were present over each ischial tuberosity, and smaller masses occurred over the sacroiliac joints. There was pitting edema, grade 3, below the knees and tenderness on pressure throughout the lower part of the legs and over the dorsum of the feet. Motion of the joints was normal except in the fingers, where extension was incomplete. The palms of the hands were thick, rough and knotty, with the greatest thickness over the fourth and fifth metacarpal regions. There was a slight contracture of these fingers. The left wrist was slightly thickened, and there was increased heat and limitation of dorsiflexion.

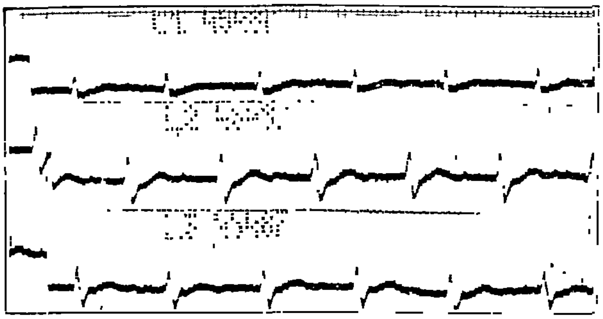

Fig. 1.—Tracing taken Jan 30, 1943

Laboratory Results.—Voided urine on four occasions had a specific gravity ranging from 1.011 to 1.024. There was a trace of albumin only once. The sediment contained 2 to 4 erythrocytes per high power field on one occasion; there were 1 to 15 leukocytes per high power field, and the casts ranged up to 3 per low power field. On admission the hemoglobin was 54 per cent (Sahli). The white blood cell count was 10,600 per cubic millimeter, with 82 per cent polymorphonuclear leukocytes, 16 per cent lymphocytes and 2 per cent monocytes. The white blood cell count gradually rose, so that five days before death it was 17,800 per cubic millimeter. The eosinophil count varied from 0 to 6 per cent. The erythrocyte sedimentation rate was 0.75 mm. per minute on admission. The feces were normal. The total protein content of plasma was 5 8 mg. per hundred cubic centimeters, albumin 3.7 and globulin 2.1 mg. per hundred cubic centimeters The sputum was studied on five occasions. There were no pneumococci types 1 through 33 on Neufeld reaction, and a culture for pneumococci and mouse inoculation were negative. No acid fast bacilli could be found in the sputum by the concentrate, culture or mouse inoculation methods. Pyogenic cultures showed Staphylococcus aureus and Streptococcus viridans Fungus cultures were negative A Fontana stain showed a few spirochetes and fusiform bacilli. The Kahn flocculation test for syphilis was negative. An electrocardiogram[13] (fig. 1) showed that the heart rate was 100 per minute, the PR interval 0 28 second, the QRS interval 0.10 second The character of the curve suggested myocardial changes. Chest leads showed no evidence of intraventricular block other than the slightly increased QRS interval. Because of the lengthening in the QT interval and increase in the value of Bazett's index sometimes found in cases of hypocalcemia, this was computed to see if it might be shortened, thus giving evidence of hypercalcemia. This was not found to be true in this case. Roentgenograms of the chest on Jan. 30, 1943 showed mottled pulmonary consolidation in the lower right lung, the left lung being normal. The causation was considered as indeterminate, although the x-ray appearance was that of pneumonia. On February 5 the increased density at the right base was more definite and there was a new patchy density at the level of the first anterior interspace on the right. The left lung showed an increase in density similar to that on the right (fig. 2). Other laboratory studies were planned but could not be performed because of the unexpected death.

Hospital Course.—The patient was increasingly restless throughout the terminal illness. She sat propped up in bed partly because of dyspnea but more especially because of discomfort when lying supine. The annoying cough persisted. A small amount of mucoid sputum was raised with considerable difficulty. The patient was lethargic at times and had to be constantly encouraged to take food and fluids. She complained of aching epigastric pains at times, and emesis occurred once or twice a day. No blood was seen in the vomitus. Physical signs in the chest corresponded to the x-ray changes. A striking feature was the minimal febrile response despite the apparently extensive pulmonary involvement. During the first seven hospital days the temperature did not exceed 99 F. and the maximum temperature the next four days was 101 F. There was then an afebrile period lasting three days followed by a period of fever not exceeding 100 F. during the terminal three days. The pulse fluctuated widely but averaged between 95 and 100 beats per minute. Respirations were between 25 and 30 per minute. On the thirteenth hospital day the patient suddenly complained of pain in the right foot and calf of the right leg, which became definitely cold, and the toes were cyanotic. This condition spread to involve the entire leg from a point 5 cm. below the knee. The right posterior tibial and dorsalis pedis pulses were absent. These changes were considered to represent signs of arterial occlusion. An effort to reduce the metabolism of the ischemic tissue with ice had to be discontinued because of a severe fall in the general body temperature. During the next three days there was slight improvement in the condition of the right leg. At this time, however, there was again a sudden increase in the pain, and it was felt advisable to effect a lumbar sympathetic procaine anesthesia. This was done, 25 cc. of 1.5 per cent procaine without epinephrine being used. No immediate objective effects were noted, but the patient said that both legs felt numb below the knees. She seemed to tolerate the procedure very well and was observed unchanged with no complaints thirty minutes after injection. Ten minutes later she was found dead in bed.

Necropsy Findings.[14]—The main gross pathologic change was the presence of white, chalky looking material in the myocardium, kidneys and arterial vascular system. These white deposits were sometimes continuous, so that an entire artery appeared white when viewed from the intimal side, and on cross section the inner portion of the media consisted of a white ring The myocardium cut with increased resistance and throughout was found to be speckled with grayish white dots. The endocardium over the apexes of the papillary muscles and over the valve rings and leaflets had a white appearance. Many white flattened plaques were noted beneath the endocardium of the left auricle and at the base of the aorta. The coronary arteries were white as viewed from the intimal surface but were patent and thin walled. The aorta and the iliac, splenic

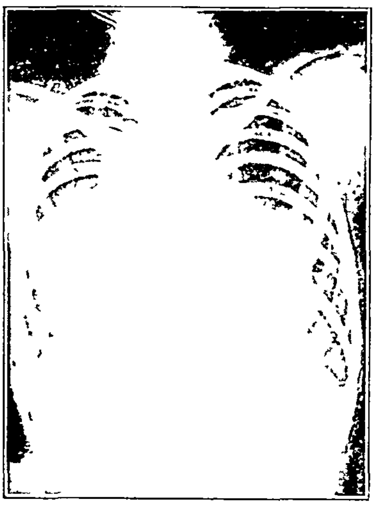

Fig. 2.—Appearance of chest Feb 5, 1943

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[13] Dr. Franklin Johnston interpreted the electrocardiograms.

[14] Dr. Carl V. Weller interpreted the microscopic sections.

and mesenteric arteries also showed this pure white color. The kidneys were pale and of normal size. After sectioning, the surface presented a fine granular appearance; distinction between cortex and medulla was not sharp. There were grayish white radiating lines passing out into the cortical area. Fibrous appearing masses of chalky white material were found in and beneath the dura; these could be easily removed from the bony ridges at the base of the skull after removal of the dura. Grayish white opaque areas were also scattered over the falx cerebri and tentorium cerebelli. Both lungs were irregularly firm throughout and moderately edematous. There was no definite consolidation, nor was any portion friable, but the stroma of the lung seemed to be increased. The bronchi were patent; the bronchial mucosa appeared normal; there was no purulent exudate. A small infarct was found at the base of the right lung. There were multiple shallow ulcerations on the lesser curvature of the stomach just proximal to the pylorus. In the duodenum there was an old ulcer measuring 2 cm. in diameter which had perforated posteriorly into the head of the pancreas. Adjacent to this there were three small acute ulcerations. The only peripheral joints examined were the right knee and ankle. On the surface of the synovium and articular cartilage pearly white plaques were seen.

The microscopic study showed the diffuse white material distributed throughout the arterial vascular tree and in various other sites to be deposits of calcium salts (fig. 3). There were numerous myocardial infarcts in various stages and patchy areas of degenerative fatty infiltration. Dense calcification formed almost a continuous layer in the left auricle and extended to the margin of the mitral valve (fig. 4). The larger coronary arteries showed slight intimal thickening and diffuse impregnation of the media with calcium salts. The smaller coronary branches within the myocardium showed advanced calcification, which had resulted in the obliteration of many of them. Patchy lipoidosis occurred in the intima of the aorta, and areas of calcification were found in the media just beneath the intima. The kidneys showed extreme calcification involving chiefly the blood vessel walls, which in areas appeared to secondarily involve tubules and glomeruli (fig. 5). The larger renal arteries showed great thickening of the intima, but the intense calcification was in the media. Well defined arteriosclerotic nephropathy was present. The brain was congested, and hemorrhage by diapedesis had occurred in the perivascular spaces. Neither the meningeal nor the cerebral vessels showed calcification, but there was much lime salt in the dura mater and some in the pineal body. Calcification in the lungs was chiefly confined to the small vessels of the bronchi, bronchioles and alveolar walls of those portions where there was chronic fibrous pneumonitis. The cartilage plates of the medium sized bronchi showed heavy calcification with metamorphosis to bone. In some of the pulmonary alveoli there were groups of phagocytes containing lipoid material. There was heavy calcification of the perichondrium of the larynx, trachea and large bronchi, in the smooth muscle of the bronchial walls and in the thyroid and thymic arteries. The splenic and mesenteric vessels contained considerable calcium. The base of the chronic duodenal ulcer was formed of adipose and pancreatic tissues. There was chronic interstitial pancreatitis, and some of the small peri-

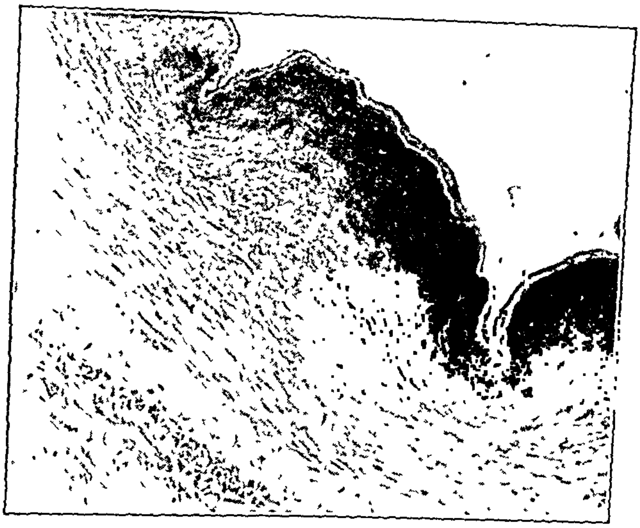
Fig. 3 —Section of artery showing extensive calcification involving inner portion of media.

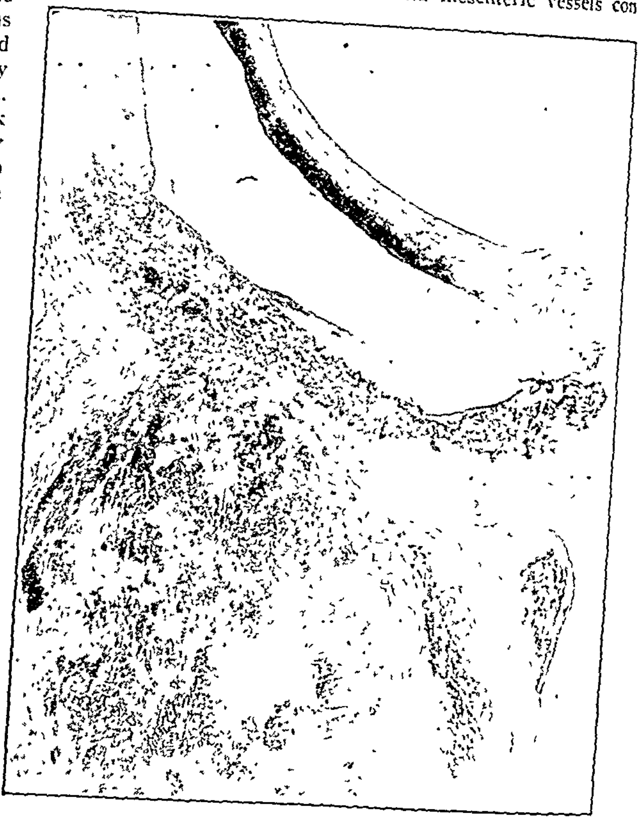
Fig. 4 —Section through mitral valve showing calcification in valve leaf above and valve ring and myocardium below.

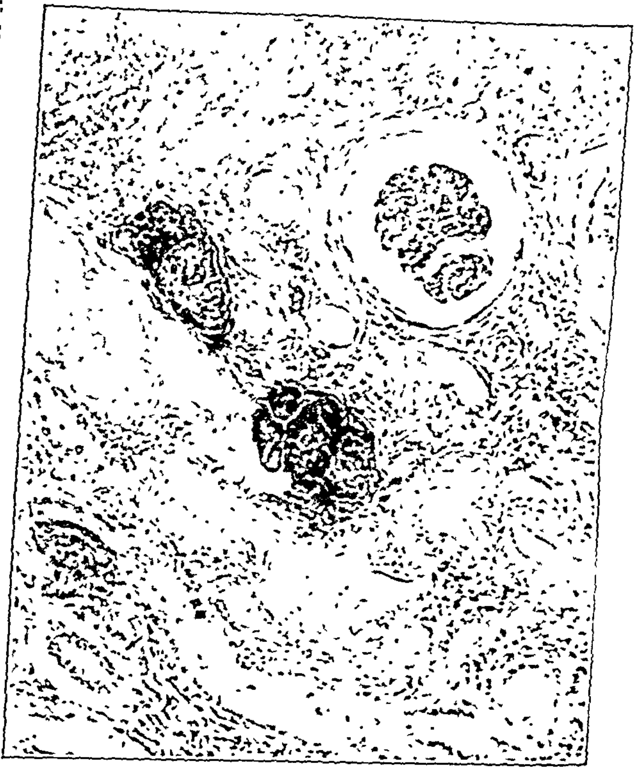
Fig. 5 —Calcification in and about renal tubules.

pancreatic arteries were almost obliterated by intimal proliferation inside the zone of calcification The specimen from the region about the left ischial tuberosity showed adipose tissue and fascia, with heavy calcification of vessel walls and chronic productive inflammation. The tissue from the right knee and ankle showed some areas of calcification of the joint capsule, with a thickened synovial membrane in which there was some osteoid tissue. In other areas the synovial membrane showed only a mild chronic inflammation with slight development of villi. A section of rib and sternum showed a cellular marrow. The bony trabeculae were widened by the deposition of a broad layer of new formed bone on them

COMPARISON OF PREVIOUSLY REPORTED CASES WITH THE PRESENT CASE

All previously reported cases of vitamin D intoxication with metastatic calcification (with the possible exception of the case reported by Wells and Holley[5]) were boy infants from 4 to 18 months old. The vitamin D preparation producing the toxic effects included simple fortified cod liver oil, ultraviolet irradiated ergosterol and electrically activated vaporized ergosterol. The daily dose ranged from 400 to 30,000 international units. Since body weight was not given in most cases, the dosage in units per kilogram of body weight cannot be computed. The shortest length of time over which the drug had been given before demonstrable calcification was produced was fourteen days. In only 3 instances was the time of year during which the drug had been given mentioned; in these 3 cases it was summer, when more abundant ultraviolet light would be available. Since all patients were infants, it is to be assumed that they received abundant milk in their diets. In only 1 case was it stated that the vitamin preparation was given in milk. This is important, since Lewis[15] has shown that by using milk as a menstruum for vitamin D the antirachitic value of the vitamin was much greater than that of a similar dose given in corn oil or propylene glycol. Metastatic calcification, the chief pathologic finding in all cases, was limited to the kidneys in 4 cases; in the fifth case it was also found in the stomach, lungs, and in the inner layer of the media of arteries quite generally distributed.

With the possible exception of one other,[5] our patient is the only adult in whom vitamin D intoxication led to metastatic calcification: Also in no other reported case did the condition occur in a female. The amount of irradiated ergosterol taken by our patient was from 100,000 to 500,000 international units per day and is more than was taken in most of the previously reported cases. However, calculated as units per kilogram of body weight (2,200 to 11,000 international units per kilogram daily) she received a relatively smaller dose and considerably below the value of 20,000 international units per kilogram of body weight per day, usually considered as the minimum toxic dose for the human being.[16] In our case vitamin D had been taken for over a year, a longer time than in any of the reported cases. Two other factors which would tend to increase the toxicity of the vitamin D in our patient were the high intake of calcium and a tendency toward mobilization of calcium from the bones as a result of confinement to bed during the last three months of her life. Metastatic calcification was as extensive as in any case previously described and was quite characteristic of that seen in experimental vitamin D intoxication.

PATHOLOGY OF VITAMIN D INTOXICATION

Our case is a remarkable example of the advanced stages of vitamin D intoxication. Opinion is divided as to the pathologic changes occurring in the earlier stages of intoxication. Steck, Deutsch, Reed and Struck[17] feel definitely that cellular damage occurs first and that calcium is then deposited in these injured areas. Ham[18] considers that the pathologic calcification is not preceded by cellular damage, since he was unable to demonstrate changes in cells twenty-four hours after administration of the drug to rats, yet at forty-eight hours massive pathologic calcification had occurred. The pathologic calcification involves chiefly the kidneys, lungs, stomach, arterial vascular system and myocardium. The calcium can usually be seen grossly as a gray-white deposit in the media of arteries and irregularly distributed through the involved organs. On microscopic examination the calcium in the kidneys is reported to be found chiefly in the lumen of the collecting tubules or in the tubular cells. In our case the renal calcification seemed to be primarily in arterioles, the tubular and glomerular involvement being secondary. In the stomach it frequently occurs in the acid-secreting cells, supposedly because of the fact that acid secretion renders these cells more basic and thereby favors calcium salt deposition. The same mechanism is proposed to explain the occurrence of calcification in the lungs, where elimination of carbon dioxide leaves the tissues more basic. Calcification in the myocardium is often associated with necrosis and infiltration with mononuclear and polymorphonuclear leukocytes. The arterial calcification is well described by Vanderveer[19] in reports of experiments on rabbits. It is limited to the media and usually occurs in the inner third of this layer; the intima appears to be entirely spared. Harrison[20] has reported that he was able to produce combined "cholesterol sclerosis" (in the intima) with vitamin D sclerosis (media) in rabbits. No matter which lesion was produced first, the subsequent process involved only the part of the vessel uninvolved by the other process. Harrison considered this to indicate that the lesion first produced immobilized that section of the artery and prevented subsequent sclerosis in that area by the other method.

SYMPTOMS OF VITAMIN D INTOXICATION

The most frequent symptoms of toxicity from vitamin D are anorexia, nausea and vomiting, diarrhea (sometimes with bloody stools), polyuria, muscular weakness, lassitude and headache. Some patients show profound depression. Reed, Struck and Steck[16] describe a sensation of tightness and hyperesthesia across the occiput when lying supine. Our patient presented many of these symptoms; whether all can be attributed to the excessive vitamin D must remain conjectural, but they are worthy of consideration. During the first hospitalization she had complained of periods of nausea, diarrhea, occipital headache, pain in the upper part of the back and the neck, and stiffness of the neck. At this time she reported taking some "irradiated yeast tablets and liver capsules." She may have been receiving toxic doses of vitamin D at that time. During the last period in the hospital she complained of anorexia, weakness, fatigue, aching pains in the arms and legs and a loss of 15 to 20 pounds in the previous four months. There was burning on urination and nocturia. She showed psychic changes, was restless and depressed, and later was at times irrational. These psychic changes were poorly understood at the time but they probably represented the toxic effects of vitamin D.[16] The occurrence of pigmentation in the skin of 2 persons who had taken vitamin D over long periods was reported by Reed, Struck and Steck.[16] Small areas of brownish pigmentation were found on the skin of our patient. The absence of significant abnormal urinary constituents is noteworthy in view of the changes in the kidneys encountered at the postmortem examination. The fact that the primary renal lesion was one of vascular calcification, with the tubules and glomeruli being involved only secondarily, may in part explain the lack of abnormal urinary findings.

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[15] Lewis, J M: Further Observations on the Comparative Antirachitic Value of Crystalline Vitamin D Administered in Milk, Corn Oil and Propylene Glycol. J. Pediat **8:** 308-314, 1936

[16] Reed, C. J.; Struck, H. C, and Steck, I E: Vitamin D: Chemistry, Physiology, Pharmacology, Pathology, Experimental and Clinical Investigation, Chicago, University of Chicago Press, 1939

[17] Steck, J. E; Deutsch, H; Reed, C I, and Struck, H C Further Studies on Intoxication with Vitamin D, Ann. Int Med. **10:** 951-964, 1937

[18] Ham, A. W: Mechanism of Calcification in the Heart and Aorta in Hypervitaminosis D, Arch Path **14:** 613-626 (Nov) 1932

[19] Vanderveer, H L Hypervitaminosis D and Arteriosclerosis, Arch. Path. **12:** 941-955 (Dec.) 1931

[20] Harrison, C V Experimental Arterial Disease Produced by Cholesterol and Vitamin D, J Path & Bact **36:** 447-453, 1933

ABNORMAL CALCIUM METABOLISM IN VITAMIN D INTOXICATION

In order to understand how such extensive metastatic calcification occurs under the influence of large doses of vitamin D it is necessary to review briefly the present knowledge of calcium metabolism, which is admittedly incomplete. There is more calcium in the serum at all times than can be accounted for by the laws of simple solution. Barr[21] states that only about 25 per cent of the serum calcium can be accounted for on this basis. At least two other factors are considered to be active to maintain the remainder of calcium in the serum. The more important of these is the hormone of the parathyroid gland, which holds some 40 to 50 per cent of the normal serum calcium in solution. In some way the action of vitamin D is related to this fraction of the total serum calcium, but the exact relationship of the vitamin and parathyroid hormone is not settled. Another factor is the combining effect of serum proteins, which hold about 30 to 40 per cent of the normal serum calcium in solution. Abnormal tissue calcification can occur with total blood calcium values that are not elevated[22] and, conversely, the total serum calcium may remain quite high for a long time without producing pathologic calcification. These facts indicate the importance of qualitative factors emphasized by the studies of Ham and Portuondo.[22] These workers found that following the administration of massive doses of irradiated ergosterol to rats and rabbits pathologic calcification did not appear while the serum calcium was rising but it was considerable while the serum concentration was falling. They explained this observation as follows: The rise in serum calcium was due to an increase in the fraction controlled by the parathyroid hormone, the calcium coming from the intestine, bones and other tissues. As the serum calcium fell there was a rapid release into the serum of calcium from this parathyroid controlled fraction, which would necessitate holding a large amount of calcium in solution in the serum until it could be deposited or excreted. Since the capacity for solution of calcium in the serum is sharply limited, precipitation of calcium in the tissues results. Thus it appears that a rapidly fluctuating level of serum calcium is more likely to produce pathologic calcification than a persistently elevated one.

In the light of this explanation it should be recalled that our patient had taken large daily doses of irradiated ergosterol for at least one year before her death, and from six to three months prior to her last hospital admission she had taken five times her usual daily dose of 100,000 international units. The usual smaller daily dose was resumed three months prior to admission; at about this time her condition became worse. When she entered the hospital vitamin D was completely discontinued and her clinical course was progressively worsened. We do not have serum calcium determinations to substantiate this sequence of events, but it is possible that this program of vitamin D intake in our patient resulted in a condition analogous to that observed by Ham and Portuondo in experimental animals. A recent attempt at deposition of calcium in bones is suggested by the appearance of the bone trabeculae, which were widened by a broad layer of new formed bone. If this could not proceed with sufficient rapidity or the excretion of calcium was insufficient, pathologic tissue calcification would result.

Even though blood calcium determinations were not made and hypercalcemia observed, because the clinical and pathologic abnormalities are so characteristic and because of the history of prolonged high vitamin D intake and the inadequacy of other possibilities to explain the pathologic changes, we are confident in ascribing the illness and death to vitamin D intoxication. Other factors may have played a part in the pathologic calcification in this case. Ham[18] quotes Wells as stating that calcium can be precipitated from serum of high carbon dioxide content by rendering the serum more alkaline. Some degree of alkalosis may have occurred in our patient, since she vomited frequently and had constant hyperpnea. She also had considerable gastrointestinal difficulty, and postmortem examination showed a penetrating peptic ulcer and several acute gastric and duodenal ulcers. Reed, Struck and Steck[16] mention that patients who have gastrointestinal complaints, especially diarrhea and constipation, are more susceptible to the toxic effects of vitamin D. It is possible that some of the abnormal calcification occurred within the last few days of the patient's life. The poor organization of the calcium deposits in the arteries and between the dura mater and the skull suggests recent deposition. That this type of calcification can occur in as short a period as forty-eight hours after administration of irradiated ergosterol to experimental animals has been shown by Ham.[18]

COMMENT

Mild symptoms of vitamin D intoxication, such as gastrointestinal and genitourinaray complaints, are not uncommon during the use of large doses of this drug. It is important to detect these earlier symptoms and reduce the dose or withdraw the drug to avoid the potential danger of more serious toxic effects. The most severe toxic effect is the occurrence of metastatic calcification, which may lead to death. This is rare in the human being and especially in the adult, but the fact that it does occur should suffice to make one cautious. The fact that reported deaths from excessive amounts of vitamin D have usually been in infants may suggest greater susceptibility of the young or simply that the doses given were greater per unit of body weight. However, until recently large doses of vitamin D have been given only to infants and children, and in most adults the symptoms of vitamin D toxicity are appreciated and the drugs discontinued, whereas in infants its administration may be unwittingly continued.

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[21] Barr, D. P.: Pathological Calcification, Physiol. Rev. **12:** 593-624, 1932.

[22] Ham, A. W., and Portuondo, B. C.: Relationship of Serum Calcium to Pathological Calcifications of Hypervitaminosis D, Arch. Path. [illegible] (July) 1933.

In recent years large doses of vitamin D preparations have been prescribed for the treatment of a wide variety of diseases, including arthritis, pollinosis, tetany, psoriasis, acne and trichonosis. A discussion of the efficacy of this form of therapy in these widely divergent clinical conditions is beyond the scope of this paper, but it might be well to state that in most cases the administration has been largely on an empirical basis and the results reported vary considerably, many being contradictory. It is regrettable that the use of these potentially toxic preparations has been advocated in the lay press and the medications have been sold to the public without need for prescription. Our case is an example of the injudicious self medication with one of these preparations and indicates their potential danger. There is great variation in species susceptibility and individual susceptibility to the toxic action of vitamin D. It is usually stated that the threshold of toxicity in the human being is 20,000 international units per kilogram of body weight daily, but Reed and his associates [16] report toxic effects in one adult with as little as 1,000 international units per kilogram of body weight daily. The severe toxicity in our patient was produced by from 2,200 to 11,000 international units per kilogram daily. The susceptibility of an individual will vary at different times, and Reed, Struck and Steck [16] found that toxicity was more likely to occur in patients with gastrointestinal dysfunction, especially constipation and diarrhea. They reproduced toxicity at will by creating a gastrointestinal disturbance in a person taking large but previously subtoxic doses of vitamin D. According to these investigators the factors which influence the toxicity of vitamin D are the dose per unit of body weight, the route and duration of administration, the composition of the diet in regard to the mineral and organic contents, the state of the alimentary tract, species susceptibility, age, preexisting pathologic conditions, the vehicle in which the vitamin is administered, the state of the endocrine system, the purity of the vitamin preparation, the source of the vitamin and other factors not yet recognized.

The toxic properties depend in part on the method of production of the vitamin preparation. This is illustrated by the frequent toxic effects of the earlier ultraviolet irradiated ergosterol, which contained large amounts of toxisterol. The electrically activated ergosterol [23] produced by the Whittier method appears to have properties somewhat different from vitamin D produced by ultraviolet irradiation of ergosterol. It appears to be less toxic, but until more is known of this preparation it too should not be used indiscriminately, for calcium deposits were found in the kidneys of an infant by Wolf [7] after the administration of 300,000 international units daily of this drug for two weeks.

SUMMARY

One is not justified in drawing too many conclusions from the limited data available on this subject, but from a review of the cases presented the following conclusions seem permissible:

Concentrated vitamin D preparations, especially when administered in large doses, should be considered as potentially toxic drugs. Their administration should be carefully supervised and the recipient should be kept under close observation in order to detect symptoms of toxicity. When given in excess of tolerance, characteristic symptoms result which should be recognized in order to forestall more serious consequences. In the human being death may occur, even in the adult, as a result of vitamin D intoxication causing calcification of organs and arteries. There are at least 5 such instances (including our case) reported. The intoxicating dose depends on many factors and varies greatly in different persons and at different times in the same person.

In experimental animals pathologic calcification and death may occur without hypercalcemia. Pathologic calcification seems to depend more on fluctuations of serum calcium than hypercalcemia per se and may occur only during the decline of hypercalcemia.

THE PSYCHOSOMATIC ASPECTS OF STERILITY

GORDON R. KAMMAN, M.D.
St. Paul

Although pregnancy is a much investigated process and although the science of obstetrics has advanced greatly in the past fifty years, we still do not know the answers to some of the fundamental questions regarding just what happens to a woman when she becomes pregnant. The theory that the emotional state of a woman might influence conception probably would seem unimportant to gynecologists were it not for its application to the widespread problem of sterility.

Physicians, as well as nonmedical groups, are becoming increasingly aware of the importance of psychosomatic investigation. Psychosomatic medicine is that discipline which recognizes the fact that psychic and somatic phenomena are inseparably interwoven. It is now a well accepted fact that we can no longer adhere to the dichomatous concept of man. We no longer can separate an individual into psyche and soma. What affects one affects the other and vice versa. Emotional conflicts can result in somatic dysfunction, and psychologic therapy is often able to affect improvement in such dysfunctions. It has been demonstrated over and over again that an idea can be converted into a symptom. One has only to think of the phenomenon of "watering of the mouth" when a person thinks of eating a tart substance. The stimulation of the salivary glands arises in the psychic field, and the increased salivation is due to an idea rather than to any mechanical or chemical stimulus of the salivary organs. One has only to think of the increased rate of the heart when a person is under emotional stress. One has only to think of the engorgement of the face referred to as "blushing" in certain psychiatric situations. That emotional conflicts can result in somatic dysfunction in the generative organs as well as in other organs seems inevitable. If, as well as others, the gastrointestinal and the cardiovascular systems can be affected by emotional states, why is it not reasonable to suppose that the generative organs can be affected by such states?

Although no organic basis for their disability can be found, many women do not conceive. With some changes in the life situation of some of these women (for example, after adoption of a child) but without demonstrable changes in their structure or their physiology, they become fertile. This has become such common knowledge that married couples about to adopt a child often hear predictions to the effect that they will now have a child of their own. This frequently comes to pass. Unfortunately we do not possess accurate statistics on the frequency of such events; but since almost every one knows of one or several such instances, they must occur rather frequently. Here is another case in which common experience and observation seem to agree with the psychosomatic point of view that psychologic factors may play a significant part in the ability of a woman to conceive.[1]

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[23] Ertron, produced by Nutrition Research Laboratories, Inc., Chicago.

Read before the annual meeting of the Minnesota Society of Obstetrics and Gynecology, Nov. 10, 1945, St. Paul.

Dr. J. Murray Scott of Ayerst, McKenna and Harrison, Ltd., of New York, rendered valuable assistance in obtaining data on the neurophysiology of ovulation.

The first careful psychologic study of a childless married couple who had a child of their own shortly after they decided to adopt one was made by Orr.[2] He studied a couple who remained childless for several years after they were married. Eventually they decided to adopt a child. Both the husband and the wife had been psychoanalyzed. It was found that the husband had a need to remain emotionally dependent on his wife (as a parent figure) and he had encouraged her to continue working and she keenly resented this. In the wife's analysis it was brought out that she never had been permitted by her parents to be feminine, and this furnished some very rich conflict material. Her parents had wanted a son and, instead of treating her as a girl, they had treated her as a boy, dressed her in tailored clothes, encouraged her to develop and retain a boyish figure and urged her to engage in athletics and also to play golf with her father. Emphasis was also placed on the importance of her being independent and self supporting, and she was taught to associate these traits with masculinity. When, after marriage, she was compelled to continue working and was encouraged to do so by her husband, she found herself in a situation similar to that in which she had been before marriage, with her husband now assuming the role formerly played by her father (father substitute). Her conflict revolved around the fact that if she became pregnant she would have to stop working outside the home and abandon the masculine role. This was in direct conflict with her early training and bringing up, which had taught her to retain the masculine role.

The decision of this young couple to adopt a baby on a definite date made it necessary for the wife to give up her job. Having done this, her hostility toward her husband decreased and her dissatisfaction with herself in the masculine role was modified. Her formerly deprecated femininity now became an important factor in this young woman's personality, and it is interesting to note that she became pregnant in a few weeks after giving up her job and assuming the care of the adopted child.

This is but one case of apparent sterility in which the psychologic material has been studied from the psychoanalytic point of view. However, thousands of similar cases exist, and many of them have been dealt with from various psychiatric points of view. It appears quite clear that when a previously childless couple have a child of their own after making the decision to adopt one the probability of psychologic factors being present as a cause of the previous infertility is more apparent than in those cases of childlessness in which no event occurs to demonstrate possible factors.

Aside from Orr's contribution, the literature consists mainly in discussions on the possibility that sterility may be psychogenic. Dunbar[3] states ". . . that psychic influence, associated with a vivid but unsatisfied desire for a child, may stimulate the ovaries to pathological growth. It is possible that this may result in premature maturation of the follicles and discharge of ova which are not yet ready for fertilization, and the consequent sterility. That the peculiar cases of first conception after fifteen or twenty years of married life may be explained by the fact that as a woman is gradually reconciled to her sterility this injurious influence on the follicular apparatus disappears" (p. 341). In other words, although women may ovulate more or less regularly, interference with the neuroendocrine control of ovulation may result in the production of an ovum that is not ready for fertilization, or it may result in some other dysfunction which interferes with the process.

In view of the variety of mechanical and chemical (chiefly endocrinologic) processes involved in conception, it is a priori almost impossible that psychic functions should not play a part. Furthermore, every one is aware of the influence of psychic factors on the endocrines, and this gives additional justification for the belief that psychically influenced hormonal processes may play a part in conception. Selltim believes that we have to reckon with a possibility of postponement of ovulation (or the opposite), since with all emotions there is a decided change in abdominal circulation. This is synonymous with the possibility of favoring or hindering conception (pp. 341-342).

Menninger[4] states that "the premature maturation of the follicles resulting from hyperactivity of the ovaries may in some cases be cured by psychotherapy, in others by a gradual reconciliation of the woman to her sterility, this reconciliation thus serving to decrease the pathological (emotional) stimulation of the ovary and hence allowing it to discharge normal ova and to terminate the sterility, as when a child is born after a couple has adopted one" (p. 522). Knight[5] says "it not infrequently happens that a childless wife does become pregnant sometimes after adopting a child, although the adoption did not take place until the couple were thoroughly convinced that conception was impossible. One is led to theorize that unconscious opposition to childbearing might have been responsible for the functional sterility and that this unconscious opposition is somehow overcome by the experience of adopting and taking care of a child. How the unconscious opposition to childbearing might have operated to thwart the constant attempts to achieve conception is a moot question. One possible hypothesis is that the unconscious of the woman . . . may affect the physiology of ovulation or implantation in such a way as to prevent conception. Another hypothesis is that there is an unconscious awareness in the woman of the time and fact of ovulation and that she manages to avoid coitus at the critical period" (p. 66).

What is the healthy attitude toward becoming pregnant? As far as woman is concerned, pregnancy is the highest type of creativeness; it represents the chief goal of feminine psychosexual maturity. One of the first things that a woman thinks about after she is married is the possibility or probability of her becoming pregnant. Regardless of what their eventual wishes or plans may be, the threat of a possible immediate pregnancy often is a major factor in determining marital adjustment. Previous sexual information and experience, the nature of the sexual relations with the husband, the religious mores involved in connubial relationships and a host of other factors necessarily modify the woman's attitude. If women fear becoming pregnant, the fear is usually focused on whether or not the pregnancy may come too soon after marriage or too soon after the last child, whether they are able to afford a pregnancy, whether one's social pleasures and freedom will be interfered with, whether or not the husband will approve of a pregnancy at a particular time, or on any one of a large number of other implications.

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[2] Orr, D. W.: Pregnancy Following the Decision to Adopt, Psychosom. Med. 3:441-446 (Oct.) 1941.

[3] Dunbar, H. F.: Emotions and Bodily Changes, ed. 2, New York, Columbia University Press, 1938.

[4] Menninger, K. A.: Somatic Correlations with the Unconscious Repudiation of Femininity in Women, J. Nerv. & Ment. Dis. 89:514-527 (April) 1939.

[5] Knight, R. P.: Some Problems Involved in Selecting and Rearing Adopted Children, Bull. Menninger Clin. 5:65-74 (May) 1941.

Just as there are many rationalizations and neurotic reasons for not becoming pregnant, there are many motivations for becoming pregnant. A woman may consider pregnancy a useful tool with which she can accomplish certain objectives. She may feel that pregnancy would provide an escape from intolerable family or social situations; it might bind her husband to her or hold him in the face of other attractions; or the *woman may delude herself into thinking that if she* becomes pregnant her husband will love her more. A woman may use pregnancy for ulterior motives, such as gaining or insuring support or inheritance. These are some of the conscious reasons why a woman might want to become pregnant. There is a growing opinion among psychiatrists that there may be many unconscious as well as conscious reasons why a woman may or may not want to become pregnant.[6] We all know what powerful influences unconscious wishes or fears can exert. On the conscious level we may think we know the reason why we do certain things, but the real motivation may be at the unconscious level and may be something altogether different from anything that we are aware of.

I think that we are all agreed that psychologic factors to a great degree enter into the question of the nausea and vomiting of pregnancy. Although in many cases the vomiting is unquestionably toxic in origin, approximately 50 per cent of the obstetricians questioned by Menninger [6] regarded nausea and vomiting as a psychologically motivated and produced symptom in the great majority of instances. Many of the physicians cited produced evidence to support their opinion. Many called attention to the type of person in whom vomiting most often occurred—"the well to do, the intellectual, the college girl." If mental conflict admittedly can cause the nausea and vomiting of pregnancy, it is conceivable to me that mental conflict also can interfere with other physiologic functions having to do with reproduction, such as ovulation, and produce sterility.

Assuming then that emotional conflict can result in disturbances of the functions of the sympathetic nervous system sufficient to bring about somatic changes, let us go on to what is actually known and what has been proved regarding the neurophysiology of ovulation and the neural pathways through which this function is mediated. Little is actually known in regard to the neurophysiology of ovulation in women, but certain fundamental principles are understood about the physiology of ovulation in animals.[7] Bellerby showed that ovulation does not occur spontaneously in the rabbit, but it may be induced in this animal by injections of an acid extract of the anterior lobe of the pituitary gland. Ovulation in the rabbit normally occurs ten to twelve hours after copulation. Hypophysectomy in this animal one hour after copulation prevents ovulation. Hypophysectomy performed later than one hour after copulation does not inhibit ovulation. These observations imply that rupture of the follicle and discharge of the ovum under ordinary circumstances are the result of a hormonal influence of some sort exerted by the pituitary. Apparently liberation of the hormone responsible for ovulation occurs within one hour after copulation. Smith, however, does not believe that any specific "ovulation hormone" exists but that ovulation is the result of a balance struck between the follicle stimulating and the luteinizing hormone. Afferent impulses from the genital tract are apparently responsible in part for the liberation during coitus of the pituitary principle causing ovulation, but they are not essential, for Fee and Parks have shown that ovulation occurs after the vulva and vagina have been anesthetized. Sexual excitement resulting in an orgasm is capable alone (i. e. without coitus) of causing ovulation *in the rabbit. Now, sexual excitement is an acute* emotional situation. It is an emotional situation in the same sense that rage and fear are emotional situations. Of course we are not naive enough to suppose that a rabbit is capable of the same emotional nuances regarding sex that a human being is capable of. However, we still are left with the fact that, in the rabbit at least, an emotional reaction can cause ovulation. Man being a relatively more complex animal, to me the conclusion is inescapable that ovulation can be adversely or favorably affected by an acute or chronic emotional state. Anxiety is chronic fear, and the same process acting over the same neural pathways most certainly must have some affect on ovarian function. In the rabbit ovulation may be induced by electrical stimulation of the cerebrum or the lumbosacral cord or by the intravenous injection of the convulsive drug picrotoxin. This shows that the influence on the pituitary gland is of central origin. It has been shown also that ovulation can be induced by stimulation of the cervical sympathetic, the hypothalamus, the hypothalamohypophysial tract of nerve fibers or of the pituitary itself.

It is very difficult to abolish the ovulation response. This is probably due to the fact that impulses reach the pituitary from many sources. Brooks sectioned the sacral spinal cord, both sympathetic chains and the uterus together with the proximal half of the vagina and still was unable to prevent ovulation after coitus. Ablation of the neocortex and of the olfactory lobes did not prevent ovulation. However, after section of the pituitary stalk ovulation no longer occurs. Therefore, as far as the rabbit is concerned, the evidence is conclusive that the pituitary gland is a necessary dynamic factor in the process of ovulation. Through the hypothalamohypophysial tract the pituitary is in direct connection with the hypothalamus and the thalamus. The thalamus has been referred to as the cerebral center for emotional reactions. Cats and other experimental animals who have been deprived of their higher centers down as far as the thalamus still are capable of such reactions as "sham rage." The evidence is good also in human beings that the thalamus has a lot to do with the emotional life. Thus we have established a chain of neural connections between the cerebral cortex, the thalamus, the hypothalamus and the pituitary. If we think of our intellectual functions as being functions of the cerebral cortex, of our emotional life as being a function of the thalamus, it does not require any stretch of the imagination to conceive of psychologic states such as anxiety and fear having a direct effect on pituitary function, i. e. ovulation.

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Benedek and Rubenstein[8] have described interesting correlations between psychosexual responses and the level of ovarian function. They made a combined study by endocrine and psychoanalytic methods of 15 women of childbearing age during 152 menstrual cycles. While their studies appear to show that the psychic apparatus reacts strongly to incipient estrogen production and there is a definite interdependence between the amount of estrogen excreted, the time of excretion and the psychologic experience of the individual, they do not show any reverse relationship, i. e. the effect of food and other psychologic experiences on the amount of estrogen secreted. In other words, as far as I know, no experimental work has been done on the affect of certain emotional states on the amount of estrogen secreted. However, some years ago I made an observation on a patient which strongly supports the thesis that psychologic situations exert a strong affect on estrogenic function. This was the case of a woman who was living in a very unsatisfactory sexual relationship with her husband. The reasons for the sexual maladjustment were entirely psychic: there was no anatomic reason why this woman could not live a normal sex life. The woman's husband was engaged in work which took him away from the city at irregular intervals. Furthermore, the duration of his stay away from the city was extremely irregular. No matter when the husband returned to the home city and no matter how long he had been absent from the city, the woman would begin to menstruate on the day of his arrival! This observation was confirmed by one of my medical colleagues in St. Paul. Dr. Karl Menninger has told me that he has seen similar cases. This is indubitable evidence that psychologic situations, especially those colored by anxiety, can affect menstruation. By the same token it must be that they can affect ovulation and thereby have a pronounced affect on the fertility or the sterility of women.

I was once asked Why are not all women sterile who have sexual conflicts? Many cases were cited to me in which the wife had abhorred sexual intercourse, had detested her husband, had lived in constant fear of pregnancy and yet became pregnant almost annually. To me the answer lies in the fact that anxiety does not affect the same physiologic system in every individual. In one person anxiety will produce a cardiac neurosis, in another "nervous indigestion," in another headaches, in another tremors, in another frequent urination and in some others ovarian dysfunction.

Can there be a common meeting ground between "psychophysiology" and "neurophysiology." Grinker[9] concluded that "repression and inhibition, which are basic principles in psychoanalysis and neurology respectively, are dynamically identical." Both repression and inhibition indicate a negative factor in that a certain level of activity is abandoned and a positive factor which results from or is permitted by the shift of activity from one portion of the nervous system to another. "In the evolutionary (phylogenetic) process and in biological learning (ontogenetic) the shift is upward. In the devolutionary process of disease either functional or morphological, the shift is downward and is termed regressive." Therefore when we are psychologically repressed we are neurologically inhibited. Psychologic repression can be and probably always is accompanied by neurologic inhibition. Why in some women could it not be inhibition of the pituitary gland function? If functional derangement in pituitary gland activity can be brought about by disturbances in the psychologic activities of the individual, the evidence is good that psychologic states can affect ovulation. This, in my opinion, forms the basis for the psychosomatic element in some cases of sterility.

How can cases of "functional" sterility be detected? It goes without saying that every sterile woman should first have a complete physical and endocrinologic study. When all possible anatomic factors and endocrine disturbances have been eliminated as possible causes for the sterility, the patient should then be subjected to a complete psychiatric survey. Her entire life situation should be reviewed, conscious and unconscious conflicts should be identified and dealt with, and any factors inimical to healthy psychosexual functioning should be studied and eliminated. Sometimes an analysis of the personality structure uncovers important clues. The Rorschach test is very useful in this respect. An investigator well versed in the Rorschach technic can obtain a three dimensional view of the personality (psychogram) in much the same way as a stereoroentgenogram gives a three dimensional view of the skull. The presence of infantile emotional attitudes, excessive dependence or submissiveness, latent homosexual trends, deep anxiety, devastating conflicts and numerous other intrapsychic disorders can be revealed by a good Rorschach analysis.

The approach to the psychosomatic aspects of sterility must be eclectic, but our starting point should be the knowledge that women who are anatomically sound, who apparently want to bear children, who are economically and socially well able to do so, may be "functionally" sterile by reason of some neurotic disorder the significance of which even they themselves are not aware.

CONCLUSIONS

1. The neuroendocrine control of ovulation probably has its center in the pituitary gland.
2. The pituitary gland is in direct neural connection with the thalamus and hypothalamic centers, which are intimately concerned with the emotional life of man.
3. It is theoretically possible that emotional stimuli (psychologic repression) either are accompanied by or result in inhibition of pituitary function.
4. There is enough evidence in the psychiatric literature to support the concept that there is such an entity as "functional sterility."
5. Many women who are "functionally" sterile become fertile after they decide to adopt a child, after they have adopted children or after some psychiatric conflict has been solved.

1044 Lowry Medical Arts Building, St. Paul 2.

Pharmacy and Prescribing.—Pharmacy is the art of preparing and compounding medicines, so as to exalt their virtues, obviate their ill qualities and render them less nauseous to the patient. The business of this is committed to the apothecary; but as the how it shall be done belongs wholly to the physician (for the officinal as well as the extemperaneous forms come from him) so it is necessary that he should be acquainted with it.—Heberden, William: An Introduction to the Study of Physic, New York, Paul B. Hoeber, Inc., 1929.

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Clinical Notes, Suggestions and New Instruments

NODULAR NONSUPPURATIVE PANNICULITIS TREATED WITH PENICILLIN

CAPTAIN MAURICE L. ZEE
Medical Corps, Army of the United States

Pfeifer[1] in 1892 first reported the disease now known as relapsing febrile nodular nonsuppurative panniculitis, or Weber-Christian disease. Miller and Kritzler[2] in 1943 reviewed the clinical and pathologic findings in this disease with a review of 26 cases reported up to that date, adding a case report including autopsy findings. Since then V. de P. Larkin, De Sanctis and Margulis[3] reported another case and also reviewed the subject. Another case was reported by Spain and Foley[4] in 1944. Still another case was reported by Friedman[5] in January 1945. In all 30 more or less typical cases of nodular nonsuppurative panniculitis have been reported.

My purpose in this paper is to report a case of panniculitis treated with penicillin with apparent cure. Sulfonamides have been used in some of the cases reported with equivocal results. Sulfadiazine was used in treating this case with no apparent change in the course of the disease prior to the institution of treatment with penicillin.

REPORT OF CASE

History.—A soldier aged 23, admitted to Brooke General Hospital, Fort Sam Houston, Texas, on Jan. 18, 1945 as a transfer from McCloskey General Hospital, Temple, Texas, had had the usual childhood diseases, including mumps, with a left orchitis at the age of 10. Before entrance into the military service his health had always been good. His family history was essentially negative except that a maternal aunt had diabetes. He was inducted into the United States Army on July 17, 1942 and was perfectly well until March 19, 1944, when he was wounded in action in the Southwest Pacific area. He sustained a shell fragment wound of the left foot and left flank. These wounds were treated and healed. The injury to the left foot left a 1 inch scar on the medial and plantar surfaces of the left foot over the shaft of the first metatarsal. There was also a healed scar over the left lateral ilium and some atrophy with sensory changes of the left arm as a result of these injuries. He was evacuated to the United States and arrived at McCloskey General Hospital on July 15, 1944. He responded well to treatment. He showed complete recovery of the atrophy and sensory disturbances of the left arm and, aside from the aforementioned scars, was quite well. During the course of his hospitalization at McCloskey General Hospital he underwent an appendectomy on August 22 for acute appendicitis and a hemorrhoidectomy on November 15. He made an uneventful recovery from both of these operations. He was transferred to Brooke General Hospital Convalescent Unit on Jan. 18, 1945 for further convalescence.

On admission to the Convalescent Section, Brooke General Hospital, he had no complaints except for some disability of the left foot due to the plantar scar. On April 19 he was transferred to the Medical Service from the Convalescent Section because of the onset of subcutaneous nodules of the upper left arm and abdominal wall of four weeks duration accompanied by chills and fever occurring almost daily. These nodular areas were red, semifirm to touch and warmer than the surrounding skin, and they appeared to be fixed to the epidermis. They ranged in size from 1 by 1 cm. to 7.5 by 5 cm. In the course of the next three weeks he developed a total of 14 of these nodular areas involving both arms, both legs, the trunk, the abdomen and the back. His temperature was elevated daily up to 104 F. Associated with this he had frequent chills. Complete physical examination was essentially negative except for the presence of the nodules and a questionable palpable spleen.

Laboratory Examination.—Repeatedly the white blood cells showed a leukopenia as low as 3,200 with 50 to 75 per cent polymorphonuclears and moderate toxic granulation. The eosinophils were from 1 to 3 per cent. Repeated examinations for malaria were negative. The urine was normal. Routine agglutinations for typhoid, paratyphoid, typhus and brucellosis were negative. Blood culture on several occasions was negative. The sedimentation rate went as high as 21 mm. and returned to normal. X-ray examination of the sella turcica was normal, of the abdomen showed a definite enlargement of the spleen and of the chest was essentially negative.

Pathologic Examination.—Two biopsies were done. The first was essentially noncontributory. In the second biopsy, as reported by Lieut. Col. Harbert Davenport Jr., pathologist, Brooke General Hospital, the specimen consisted grossly of a segment of tissue measuring 4.5 by 3 by 1.5 cm. covered by an elliptic segment of skin which measured 4.5 by 1.5 cm. On section the epidermis appeared edematous. The outlets of the sweat glands were depressed. In the swollen subcutaneous tissue was a nodule which measured approximately 3 by 2 cm. The underlying fascia and adjacent adipose tissue were hemorrhagic. Microscopic examination revealed that the inflammatory process was limited almost entirely to the subcutaneous tissue. There was minimal cellular infiltration around the blood vessels and dermal appendages. Some of the fat lobules had undergone coagulation necrosis. Others were densely infiltrated with inflammatory cells, predominantly mononuclear, with varying numbers of neutrophils and occasional large phagocytes. The walls of the blood vessels were infiltrated with inflammatory cells, but this appeared to be part of the general reaction. The interlobular septums were edematous and showed less infiltration. In a few areas there were small, round, coccoid bodies which had the appearance of bacteria. The presence of multiple subcutaneous nodules of the chest, abdomen, forearms and legs, associated with chills and fever, relative leukopenia and the histologic findings were in keeping with, if not diagnostic of, relapsing, febrile, nodular, nonsuppurative panniculitis (Weber-Christian disease).

From April 26 until May 9, 1945 the patient received sulfadiazine 1 Gm. every four hours continuously. During this time he consistently had a daily temperature as high as 104 F. associated with chills and continued to have new nodular lesions. On May 10 penicillin therapy was instituted. The patient was given 20,000 units of penicillin every three hours intramuscularly for a period of fifteen days. He had a total dosage of 2,360,000 units of penicillin. After five days of penicillin his fever gradually dropped and during the sixth, seventh and eighth days of penicillin the highest temperature recorded was 100 F. After the fifth day of treatment he had no further new nodular lesions. On the ninth day of treatment his fever became normal and remained so during the course of his hospitalization. Shortly thereafter there was definite regression of all the skin lesions. They were no longer red or painful, and there seemed to be a tendency toward pitting of the skin over these lesions. However, after a period of thirty days from the institution of penicillin treatment the skin of the areas involved appeared normal. This patient was observed for a period of three and one-half months following disappearance of the nodules, during which time he had no recurrence of the lesions or any symptoms of panniculitis. He was separated from the service on the basis of his foot disability during the latter part of September 1945.

From the Medical Service, Brooke General Hospital, Fort Sam Houston, Texas.

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COMMENT

A case of relapsing febrile nodular nonsuppurative panniculitis (Weber-Christian disease) was observed in a 23 year old soldier, the lesions proved by biopsy. Treatment with sulfadiazine was unsuccessful. The findings and symptoms were progressive until the institution of treatment with penicillin. Twenty thousand units of penicillin intramuscularly for a period of fifteen days with a total dosage of 2,360,000 units was used. Within eight days after institution of treatment the patient's temperature returned to normal and remained there. There were no further lesions noted. The nodules regressed and during a period of three and one-half months' observation there was no recurrence of symptoms or findings. The question arises whether the patient went into a natural remission of the disease or whether the disease responded to treatment with penicillin. In view of the fact that previous treatment for this condition has been unsatisfactory, it is felt that the penicillin in this case had a definite effect on the course of the disease and that further trial with this agent of therapy in the treatment of Weber-Christian disease would be advisable.

MYCOTIC ANEURYSM OF THE ULNAR ARTERY

JEROME J. KLEIN, M.D., and DAVID CROWELL, M.D.
New York

An infrequent but serious complication of subacute bacterial endocarditis is the formation of mycotic aneurysms. Before the present era of potent antibiotics subacute bacterial endocarditis alone was considered an almost universally fatal disease, and hence any complication arising from this dread illness was often viewed as only hastening the inevitable mortality. Today, however, more and more does the literature report cures of bacterial infections of the endocardium so that treatment of the complications of this disease can be attempted.

Aneurysms arising from infected emboli were recognized as early as 1851, when Koch[1] described one occurring in a man aged 22, who, while being treated for an endocarditis, died suddenly from the rupture of an aneurysm of the superior mesenteric artery. It was, however, Tufnell[2] in 1853 who is generally credited with being the first to recognize the relationship between emboli and aneurysm formation. He believed, however, that the outpouching of the vessel was due to the pressure produced behind the embolus. Ponfick[3] in 1873 showed that the aneurysm occurred at the site of the embolism and believed this to be a purely mechanical effect. In one of his earlier cases he described a pointed calcified embolus projecting through the arterial wall into the aneurysmal sac. He postulated, therefore, three conditions necessary for the production of an aneurysm of this type: (*a*) a barbed calcified embolus, (*b*) the enlodgment at the bifurcation of a vessel and (*c*) loose connective tissue surrounding the vessel, thereby providing little support for the wall. When confronted with a soft embolus as the cause of the aneurysm, he explained the damage as being due to constant pressure much the same as in decubitus ulcers.

Eppinger[4] in a classic monograph in 1887 made a careful study of the whole subject by applying reliable bacteriologic technic in establishing the relationship between the embolus at the site of aneurysm and the endocardial lesion. He suggested the term "embolomycotic" to imply the parts that the infection and the embolus played in the production of the aneurysm. Eppinger, however, believed that the infection was carried to the adventitia, causing an exudative periarteritis which later spread to involve the media and the intima. In this process portions of the elastic and muscular elements were destroyed by the bacteria and their toxins, and the remaining medial and adventitial elements were forced out by the intra-arterial pressure to form the aneurysmal sac. Today this is held as the course of events only when small infected emboli lodge in the vasa vasorum of the adventitia and are held there. Lewis and Schrager[5] believed that the infection begins in the lumen of the vessel; the process begins in the intima, reaches and destroys the internal elastic membrane and permits a distention of the wall. This not only explains embolomycotic aneurysms but can also explain the purely mechanical effect of Ponfick's barbed and pointed emboli. Gambaroff[6] suggested that the infected emboli may lodge in the vasa vasorum of the media and hence weaken the arterial wall by spread to the other coats, with destruction of elastic tissue.

Any artery may be affected, but in a review of the literature the aorta was found to be the most commonly affected, with next in frequency the abdominal vessels, namely the superior mesenteric, the hepatic and the splenic arteries. The multiplicity of embolomycotic aneurysms is striking. Stengel and Wolferth[7] in 1923 reviewed 217 cases, and more than one aneurysm was found in 49. Moreover, of these 217 cases 187 had evidence of endocardial disease, the remainder being associated with a variety of conditions.

Indeed, mycotic aneurysms may be differentiated from others in four ways, as suggested by Lewis and Schrager: 1. In developing at an earlier age. 2. In frequently being multiple, acute and chronic forms often occurring in the same individual. 3. In the frequent involvement of the visceral arteries. 4. In the tendency to remain small.

Fig. 1.—Expansile mass of ulnar artery.

REPORT OF CASE

On Dec. 6, 1944 a white man aged 22 was admitted to Gouverneur Hospital with the chief complaints of fever, loss of weight and loss of appetite. His past history revealed that he had had rheumatic fever at the age of 6 years. He was asymptomatic until 1940, when he developed "palpitations" of the heart. Strenuous activity was curtailed at that time and he was again symptom free until October 1944, when he became ill, complaining of nausea and vomiting. Following this he had

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From the Gouverneur Hospital, medical service of Dr S. N. Weber.

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joint pains, which were fleeting in character, and a feeling of profound weakness. In addition he had a spiking fever up to 103 F., anorexia and a weight loss of 18 pounds (8 Kg.).

On admission the patient was apprehensive, well nourished and well developed and appeared acutely ill. The pulse rate was 130 per minute, the temperature 102.8 F., the respiratory rate 20 per minute and the blood pressure 168/64. The essential physical findings were a heart enlarged to the left, with a regular sinus rhythm and a loud aortic diastolic murmur. A water hammer and capillary pulse were easily demonstrable. The spleen was not palpable. Numerous scattered petechiae were seen on both feet.

Blood culture on admission was positive, showing 10 colonies of Streptococcus viridans per cubic centimeter. Repeated the next day, this showed 12 colonies per cubic centimeter. The initial white blood cell count was 10,000, with 78 per cent polymorphonuclear leukocytes. The hemoglobin was 95 per cent. Penicillin therapy was started the day after admission, with 20,000 Oxford units intravenously as the initial dose and then 20,000 Oxford units intramuscularly every two hours thereafter. After fourteen days the blood culture was still positive in the broth, so an in vitro sensitivity test of the organism to the penicillin was carried out. This showed that 0.6 Oxford unit inhibited completely the growth of 2,500,000 streptococci isolated from the blood stream of the patient. Ordinarily in 100 cases thus studied an average of 0.05 to 0.15 Oxford unit was necessary to inhibit 2,500,000 organisms. The average dosage in the treatment of these cases of subacute bacterial endocarditis was about 10,000 Oxford units every two hours, or 120,000 Oxford units in twenty-four hours. Since in this particular in vitro test the organism proved to be approximately four times as resistant, it was felt that four times the dosage was necessary to control the infection. The treatment was consequently intensified so that the patient received 100,000 Oxford units intravenously each morning and 50,000 Oxford units every three hours. After two days of this intensive therapy the blood culture became negative and remained so. Five days later the patient began to complain of pain in his right elbow region. Examination found the right antecubital region hot, swollen and exceedingly tender. It was felt that this was either a thrombophlebitis due to the intravenous administration of penicillin or an embolic phenomenon arising from the heart. The intravenous dose of penicillin each morning was discontinued and the arm treated conservatively with heat, rest and elevation. Heavy sedation was necessary to control the symptoms. Finally, after several days had elapsed and the pain in the elbow was somewhat controlled, careful examination was possible and a pulsating, expansile mass became apparent (fig. 1). The diagnosis of a mycotic aneurysm of the right ulnar artery was made.

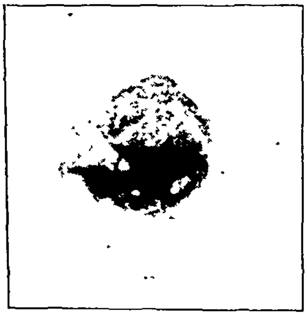
Fig. 2.—Mycotic aneurysm. A sacular structure 2.9 cm. by 2 cm. by 11 mm. There is an opening into the sac, the inner surface of which is seen to be clotted blood in one area and with a fairly smooth lining elsewhere.

Up until this time the patient had received twenty-nine consecutive days of penicillin therapy with a total of 10,225,000 Oxford units. A surgical consultation was requested and the diagnosis was confirmed. The penicillin was restarted prophylactically (12,500 Oxford units every three hours) and an operation performed. The aneurysm was found to be located beneath the deep head of the pronator teres muscle. The artery was ligated above and below and the aneurysm was removed (fig. 2). The patient made an uneventful recovery, and the return of motion of the hand and arm has been satisfactory. Pathologic section has proved the aneurysm to be mycotic in origin (figs. 3 and 4).

A careful follow-up of this patient has been carried out over a period of several months. He has been placed on a prophylactic course of 1 Gm. of sulfadiazine daily. He has gained weight, returned to his job and resumed normal activity. Repeated blood cultures since his discharge from the hospital have been completely negative. Frequent blood counts have been within normal limits.

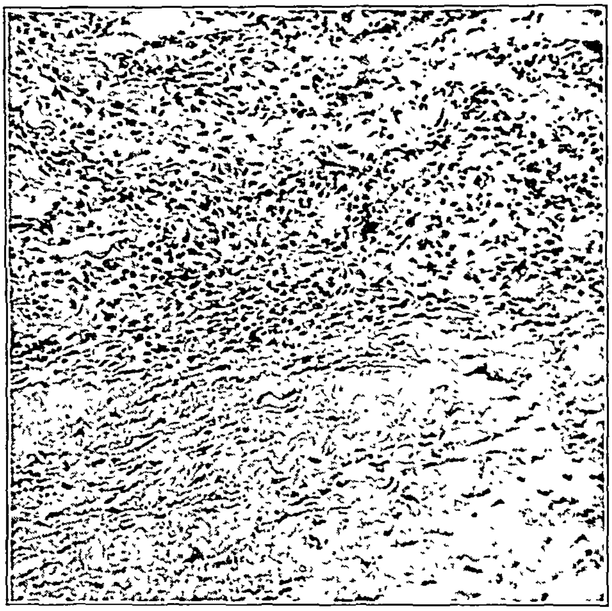
Fig. 3.—Section of the mycotic aneurysm showing extensive inflammatory reaction due to infection of the vessel wall.

CONCLUSION

In a case of subacute bacterial endocarditis there developed a mycotic aneurysm during the course of penicillin therapy. The endocarditis was cured with massive doses of penicillin, and the aneurysm was successfully removed by prompt surgical intervention. We feel that a successful surgical result in this case was in no small measure dependent on the employment of adequate penicillin therapy.

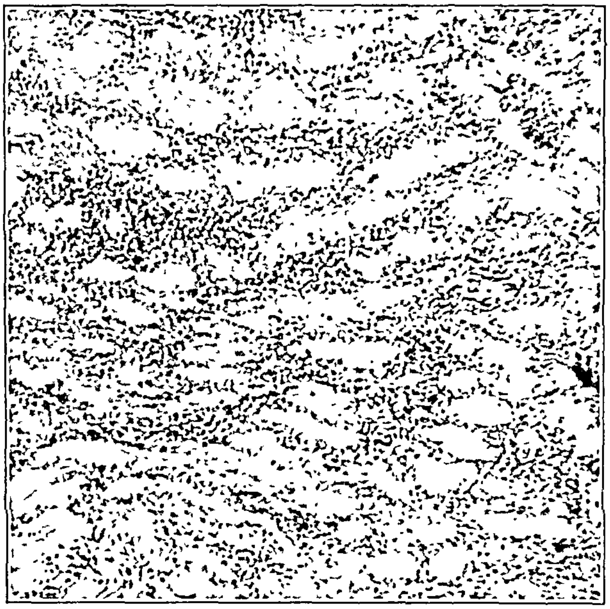
Fig. 4.—Section of the mycotic aneurysm showing that rupture has caused extensive hemorrhage into the surrounding muscle tissue.

22 East Thirty-Sixth Street, New York 16.

ACUTE ACETONE POISONING FROM LEG CASTS OF A SYNTHETIC PLASTER SUBSTITUTE

CARL C. CHATTERTON, M.D.
and
ROBERT B. ELLIOTT, M.D.
Chief-of-Staff and Fellow in Orthopedics, Respectively, Gillette State Hospital for Crippled Children
St. Paul

Cases of acute acetone poisoning reported in the literature are indeed rare, so much so that it was felt that perhaps this case report might be justified.[1] We feel that this complication in varying degree must be of considerable more frequency than the paucity of reported cases would lead one to believe at first thought.

REPORT OF CASE

F. R., a white girl aged 10 years, entered Gillette State Hospital on March 3, 1945 with the diagnoses of (*a*) cerebral spastic paraplegia and (*b*) mild hydrocephalus. On admission the urine was straw colored, clear and acid in reaction, with a specific gravity of 1.021. There were no casts, sugar nor albumin reported, although a very few white blood cells were present. The blood work-up revealed a hemoglobin of 82 per cent, a red blood cell count of 4,520,000 and a white blood cell count of 7,250 distributed as follows: polymorphonuclears 63 per cent, lymphocytes 36 per cent and monocytes 1 per cent. The bleeding time was 1 minute, and the clotting time was 3 minutes 5 seconds.

The patient's course in the hospital was good, and she gained weight, was active and cooperated well in her physical therapy. On March 20 she had bilateral adductor tenotomies and obturator neurectomies performed with an uneventful convalescence postoperatively. On May 25 she came down with chickenpox, from which she recovered completely and uneventfully. On August 14 bilateral posterior capsulotomies were performed on her knees to straighten them. She had an uneventful convalescence from the operation and rapidly regained her appetite and previous activity. On August 23 she began standing and with the recovery of her balance began to learn to walk correctly, which she was doing well by August 30. At this time it was felt that the plaster of paris casts (bilateral long leg casts) in which the patient was walking were perhaps retarding her physical gains because of their weight. It was therefore decided to remove them and to apply long leg casts made of a commercial preparation consisting of a material lighter than plaster of paris and composed of polymerized vinyl acetate, pyroxylin, chemically pure boric acid, chemically pure acetone (solvent-evaporator agent) and surgical gauze.

On September 1 the plaster of paris casts were removed; the Pyoktanin sutures were brushed from the incisions and the wounds were examined. The incisions were found to be well healed by primary intention, without any open areas. New long leg casts of the aforementioned synthetic material were applied over a double layer of stockinet, according to directions furnished by the company. The casts were smoothed by application of a commercial lacquer, also furnished by the company and consisting of primarily an acetone solution.

The patient was returned to the ward and placed before an open window with electric fans blowing over the casts to assure adequate evaporation and ventilation. The patient felt well the rest of the day, although that evening she was somewhat sleepy and lethargic. During the night her sleep was fitful and she tossed about a great deal. There were several emeses during the night and early the next morning consisting of typical coffee colored material. This was strongly positive when analyzed for blood. The patient felt better during the morning and retained cold ginger ale and cold milk fairly well. Fluids were given as the patient desired. Owing to the improvement in the patient's clinical condition the casts were polished that afternoon (September 2) by means of the aforementioned commercial lacquer furnished for the purpose. Ventilation by means of the open window and electric fans was maintained that afternoon and evening. Late that afternoon the patient gradually became worse and by evening was nearing a comatose condition, clinically. Her breathing was labored and of the Kussmaul type. There was acetone on her breath; her mouth and throat were dry; the tongue was coated. Urinalysis at this time revealed an acid reaction, albumin a trace, sugar 2 plus, acetone 4 plus and occasional white blood cells and rare red blood cells. The blood pressure was not significantly changed. The temperature was slightly elevated, having gone up to 99.2 F. The pulse rate was elevated to 120 per minute; respirations were somewhat increased. The diagnosis of acute acetone poisoning was made and supportive treatment was begun. An intravenous injection was started consisting of 500 cc. of 10 per cent glucose in isotonic solution of sodium chloride. The casts were split and removed. Examination of the underlying skin revealed no urticaria, wheals or any other signs of idiosyncrasy or irritation. The incisions were, as before, completely healed without any signs of irritation or reaction. More fluids were added to the intravenous injection throughout the remainder of the night, so that by late the next morning 2,000 cc. had been administered. Urinalysis late that night revealed an acid reaction, sugar 3 plus, albumin a trace and acetone 2 plus.

The next morning (September 3) the patient was clinically much improved, being more responsive and alert. Questioning revealed that she still felt weak and listless. Urinalysis at noon revealed acid reaction, albumin negative, sugar a trace and acetone a trace. Oral fluids were forced all this day and for several days following. The patient took a soft diet well, and her condition rapidly returned to normal. The remainder of her convalescence was uneventful. There have been no recurrences of any similar nature, and her laboratory reports since have been normal up to the present time. No similar casts of this material have been applied to this patient. Patch test of the offending material was applied Feb. 4, 1946 and was reported negative at twenty-four and forty-eight hours.

COMMENT

Analysis of this case brings to light the fact that the reaction must have been attributable to acute poisoning by acetone, the solvent-evaporator agent used in the commercial material. Ketosis may be the result of insufficient oxidation of ketone bodies with accumulation secondary to a deranged metabolism or may be the direct result, as in this case, of prolonged accumulative absorption directly of the ketone bodies (one of which is acetone) to the point of pathologic limits.[2] It is known that considerable quantities of ketone bodies may be destroyed in the muscles, and it is only when the quantities entering the blood exceed certain limits that ketosis results.[3] Thus a bedfast patient or one restricted in activity is more susceptible by nature of decreased ability to destroy the ketone bodies through muscular exercise.

Further, considerable evidence is accumulating that the ketone bodies do *not* require carbohydrate for their metabolism (the old idea expressed by the statement that "fats burn in the fire of carbohydrates").[4] Modern experimenal evidence points out that carbohydrates have no ketolytic effect, that their effect on ketosis is purely antiketogenic.[5] Thus there is no modern rationale for the administration of large quantities of glucose or glucose and insulin in the treatment of the condition.

It is of interest in this case, as differentiated from the case reported by Strong,[1] that there were no skin reactive manifestations under the synthetic casts, thereby supporting the general contention that the acetone was absorbed by way of the lungs. The presence of the hemorrhagic esophagitis in this case in the absence of any introduced foreign bodies or trauma (in Strong's case a Levine tube was required) strongly suggests a toxic manifestation of the acute acetone poisoning state.

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[1] Strong, G. F.: Acute Acetone Poisoning, Canad. M. A. J. **51:** 359-362 (Oct.) 1944; abstr. J. A. M. A. **126:** 1116-1117 (Dec. 23) 1944. Schumann, H., and Klotzbücher, E.: Eine neue Leberfunktionsprobe, Klin. Wchnschr. **19:** 1101-1102 (Oct. 26) 1940.

[2] Cecil, R. L.: A Textbook of Medicine, ed. 5, Philadelphia, W. B. Saunders Company, 1942.

[3] Neufeld, A. H., and Ross, W. D.: Blood Ketone Bodies in Relation to Carbohydrate Metabolism in Muscular Exercise, Am. J. Physiol. **138:** 747-752 (April) 1943. Koehler, A. E.; Windsor, Emanuel, and Hill, Elsie: Acetone and Acetoacetic Acid Studies in Man, J. Biol. Chem. **140:** 811-826 (Sept.) 1941.

[4] Haggard, H. W.; Greenberg, L. A., and Turner, J. M.: The Physiological Principles Governing the Action of Acetone Together with Determination of Toxicity, J. Indust. Hyg. & Toxicol. **26:** 133-151 (May) 1944. Koehler, Windsor and Hill.[3] Somogyi and Weichselbaum.[5]

[5] Somogyi, Michael, and Weichselbaum, T. F.: Ketone-Sparing Effect of Glucose, J. Biol. Chem. **145:** 567-574 (Oct.) 1942. Koehler, Windsor and Hill.[3]

It is concluded that this patient suffered an acute acetone poisoning with resulting ketosis and hemorrhagic esophagitis from the prolonged accumulative inhalation of the acetone solvent-evaporator agent used in the commercial synthetic cast material. The condition is easily recognized and readily responds to treatment of a supportive nature. This report is not intended to condemn in any way the material used but rather to bring before the medical profession the fact that this condition can occur, and to stimulate its early recognition and prevention, perhaps bringing to light additional cases of similar origin, as yet unreported.

1003 Ivy Avenue East, St. Paul 6.

Council on Industrial Health and Council on Pharmacy and Chemistry

ALUMINUM IN THE PREVENTION AND TREATMENT OF SILICOSIS

The Council on Industrial Health and the Council on Pharmacy and Chemistry of the American Medical Association have authorized publication of the following report on the use of aluminum in the prevention and treatment of silicosis. Since this means of therapy is controlled by patent and can be used only by licensees, studies will be continued by the two councils into this phase of the subject. Further reports will be issued as indicated.

Carl M. Peterson, M.D.
Secretary, Council on Industrial Health.
Austin E. Smith, M.D.
Secretary, Council on Pharmacy and Chemistry.

The dissemination of reports on the effects of aluminum powder in the prevention and treatment of silicosis has aroused widespread interest and a demand for an authoritative statement regarding its value. At the present time the following statement would seem to be warranted; it is subject, however, to such modification as future knowledge and experience may indicate.

1. In experimental animals the *prophylactic* use of aluminum inhibits the toxic action of relatively pure quartz.

2. In man, industrial dust exposures often involve mixtures of various minerals in addition to quartz and other environmental variables to which experimental animals are not subject. Therefore human silicosis usually develops more slowly and is often modified in type. Only prolonged unbiased observation, with adequate control cases, will demonstrate whether the prophylactic results obtained with animals are applicable to man.

3. Animal experiments have demonstrated that administration of high concentrations of amorphous hydrated alumina unfavorably influences resistance to tuberculosis. While this result has not yet been reported for metallic aluminum, caution in the application of all aluminum therapy to human beings is recommended.

4. The use of aluminum might appear as an easy short-cut to healthful working conditions, thus saving large expenditures for ventilation and other control methods. Actually there is no substitute for the accepted methods of dust control.

5. If industry indiscriminately treats all employees with aluminum dust, there may be aggravation of tuberculosis or other pulmonary conditions.

6. The *therapeutic* use of aluminum in man appears to relieve symptoms in a very small number of cases in which silicosis develops rapidly. Experience in some groups is more favorable than in others.

7. In view of these considerations it is recommended that the general application of aluminum therapy in industry be delayed until adequately and impartially controlled clinical observation demonstrates its effectiveness in preventing or alleviating silicosis in man. In the meantime, there should be no slackening in the control measures that have been found effective in reducing the incidence of dust diseases in industry.

Council on Pharmacy and Chemistry

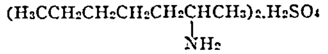
NEW AND NONOFFICIAL REMEDIES

The following additional articles have been accepted as conforming to the rules of the Council on Pharmacy and Chemistry of the American Medical Association for admission to New and Nonofficial Remedies. A copy of the rules on which the Council bases its actions will be sent on application.

Austin Smith, M.D., *Secretary.*

TUAMINE SULFATE.—2-aminoheptane sulfate.—$C_{14}H_{36}O_4N_2S$.—M. W. 328.51.

The formula of 2-aminoheptane sulfate is:



$$(H_3CCH_2CH_2CH_2CH_2\underset{\displaystyle NH_2}{\underset{|}{C}}HCH_3)_2.H_2SO_4$$

Actions and Uses.—A 1 per cent solution of this compound exceeds the vasoconstrictive effects of a similar concentration of ephedrine, while 0.5 per cent has been found to produce about equal vasoconstrictor action. The duration of effect, when compared to that of ephedrine, is prolonged.

Dosage.—A 1 per cent solution may be applied to the mucous membranes of infants and adults by spray, dropper or tampon and is usually adequate for routine treatment. A 2 per cent solution, best applied by pledgets of cotton, may be used for operative procedures, diagnostic examination and to meet other special circumstances. For displacement therapy, a 0.2 per cent solution can be used.

Tests and Standards.—

Tuamine sulfate occurs as a white, odorless powder, which is readily soluble in water. The *p*H of a 1 per cent solution is about 5.4.

Dry 1 Gm. of tuamine sulfate, accurately weighed, to constant weight at 100 C.: the loss in weight does not exceed 1 per cent.

Ignite about 0.5 Gm. of tuamine sulfate, accurately weighed: the amount of residue is not more than 0.1 per cent.

Dissolve 1.2 Gm. of tuamine sulfate in 25 cc. of water to which 1 Gm. of potassium cyanate has been added. Heat on a steam bath for one hour; cool, filter, wash the crystals with distilled water and dry at 100 C.: the derivative melts at 127-129 C.

Dissolve about 0.2 Gm. of tuamine sulfate, accurately weighed, in 100 cc. of distilled water; add 1 cc. of hydrochloric acid and heat; add 20 cc. of barium chloride solution dropwise to the boiling solution. Allow the mixture to stand four hours and then filter through a previously tared Gooch crucible. Wash the precipitate until chloride-free, dry and finally ignite to constant weight: the weight of barium sulfate found is equivalent to a sulfate content of not less than 28.5 per cent nor more than 30 per cent.

The nitrogen content, as determined by the Dumas method, is not less than 8.35 per cent nor more than 8.75 per cent.

Dilute about 1 Gm. of tuamine sulfate, accurately weighed, with water to the mark of a 25 cc. volumetric flask. Transfer 5 cc. of the solution to an ammonia distillation apparatus; add 3 cc. of 40 per cent sodium hydroxide solution and distil the amine into 20 cc. of tenth-normal hydrochloric acid until 25 cc. of distillate has been collected. Titrate the acid solution with tenth-normal sodium hydroxide, using methyl red as the indicator. Each cubic centimeter of tenth-normal acid is equivalent to 0.01643 Gm. of tuamine sulfate: the 2-aminoheptane sulfate content is not less than 96.5 per cent.

Eli Lilly & Co., Indianapolis

Solution Tuamine Sulfate, 1%: 30 cc. and 475 cc. bottles. Each 100 cc. contains tuamine sulfate 1.0 Gm., potassium phosphate monobasic 0.68 Gm., sodium chloride 90 mg., methyl parahydroxybenzoate 26 mg. and propyl parahydroxybenzoate 14 mg.

Solution Tuamine Sulfate, 2%: 60 cc. and 475 cc. Each 100 cc. contains tuamine sulfate 2.0 Gm., potassium phosphate monobasic 0.68 Gm., methyl parahydroxybenzoate 26 mg. and propyl parahydroxybenzoate 14 mg.

Solution Tuamine Sulfate 1 per cent and 2 per cent.—

Use 25 cc. of the tuamine sulfate solution for the reaction with potassium cyanate as described in tests and standards for tuamine: the product melts at 126-127 C.

Transfer 5 cc. of the solution to an ammonia distillation apparatus. Add 3 cc. of 40 per cent sodium hydroxide solution to the reaction chamber and distil the amine into 10 cc. of tenth-normal hydrochloric acid. Titrate the acid solution with tenth-normal sodium hydroxide, using methyl red as the indicator. Each cubic centimeter of tenth-normal hydrochloric acid is equivalent to 0.01643 Gm. of tuamine sulfate: the 2-aminoheptane sulfate content is not less than 95 per cent nor more than 105 per cent of the stated amount.

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SATURDAY, APRIL 27, 1946

VIRULENCE OF PENICILLIN RESISTANT BACTERIA

Most investigators are agreed that organisms may develop resistance to penicillin both in vivo and in vitro. They disagree, however, on the concurrent effects on virulence. Schmidt and his associates[1] of Christ hospital, Cincinnati, made serial transfers of pneumococci in mice treated with inadequate therapeutic doses of penicillin. The highest concentration of penicillin permitting visible growth of the parent culture in vitro was 0.4 Oxford unit per cubic centimeter. After the fifth serial passage, growth occurred when the penicillin concentration was 1.4 units per cubic centimeter. Tests of virulence in untreated control mice suggested that there was no accompanying increase or decrease in virulence.

McKee and her associates[2] of the Squibb Institute for Medical Research, however, increased the resistance of both streptococci and pneumococci to penicillin by serial transfer in nutrient broth containing increasing concentrations of penicillin. They found that this increased resistance to penicillin was always accompanied by a decrease or even complete loss of mouse virulence. Serial passage of the resulting avirulent strains in normal mice failed to restore the lost virulence.

Miller and Bohnhoff[3] of the Department of Medicine, University of Chicago, have attempted a detailed confirmation or disproof of these changes in virulence with seven strains of meningococci. The natural resistance of a typical strain was found to be sufficient to allow its growth in the presence of 0.3 Oxford unit of penicillin per cubic centimeter. By serial transfer on blood agar plates containing increasing amounts of penicillin the resistance of this strain was increased so that it would grow in the presence of 41 Oxford units per cubic centimeter. The minimum lethal dose of the initial strain was less than 10 meningococci. By the time the penicillin resistance had reached 5 units per cubic centimeter the minimum lethal dose had increased to the neighborhood of 100 meningococci, a 90 per cent decrease in mouse virulence. As soon as the resistance to penicillin reached 18 units per cubic centimeter one billion meningococci failed to kill mice. The total loss of virulence could not be restored by mouse passage. Six of the seven strains, however, retained considerable virulence beyond the 18 unit penicillin resistance stage. Mice infected with an intermediary, 14 unit penicillin resistant strain, required 600 units of penicillin for a cure, or fifteen to thirty times the effective curative dose for the initial parent strain.

Miller's data suggest that under ordinary clinical conditions inadequately treated meningococci usually retain a sufficient amount of their original virulence to be of epidemiologic interest.

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[1] Schmidt, L H, and Sesler, Clara L: Development of Resistance to Penicillin by *Pneumococci*, Proc. Soc Exper. Biol. & Med **52**: 353 (April) 1943.

[2] McKee, Clara M, and Houk, Carol L. Induced Resistance to Penicillin of Cultures of *Staphylococci, Pneumococci and Streptococci*, Proc. Soc. Exper. Biol & Med **53**: 33 (May) 1943

[3] Miller, C P, and Bohnhoff, Marjorie Proc. Soc Exper. Biol. & Med **60**: 354-356 (Dec) 1945

THE BONE MARROW IN EXPERIMENTAL FOLIC ACID DEFICIENCY

The recent important discovery of the striking value of pure folic acid in the treatment of various human macrocytic anemias[1] has added interest and significance to experimental studies on this new B vitamin. One problem of immediate importance is the type of alterations produced in the bone marrow in folic acid deficiency and the effect of administration of folic acid on these changes. Further reason for the fundamental importance of studies of the bone marrow is the fact that folic acid deficiency in the experimental animal may produce not only an anemia but also a severe granulocytopenia.[2]

Bone marrow studies have recently been made[3] in rats fed a diet deficient in folic acid, due presumably to the addition of 1 per cent succinylsulfathiazole, which inhibits bacterial synthesis of folic acid ("Lactobacillus casei factor") in the intestine. Leukopenia, granulocytopenia and less frequently anemia developed regularly in the rats, and the administration of pure folic acid either prevented or corrected the dyscrasias. The bone marrow of the animals deficient in folic acid showed progressive hypoplasia with general cellular depletion, especially of the myeloid series. The erythroid series was also usually depleted even though distinct anemia was not found. The administration of folic acid produced a striking immediate response discernible within two to three days both in the bone marrow and in the peripheral blood, manifested by an increase in hematocrit and in total leukocyte and polymorphonuclear, eosinophil, lymphocyte and normoblast counts. The response of the bone marrow was a spectacular myeloid proliferation and erythroid hyperplasia. Later the erythroid series was frequently crowded out by myeloid hyperplasia. The marrow subsequently returned to normal after a temporary overcompensation.

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[1] Spies, T D Effect of Folic Acid on Persons with Macrocytic Anemia in Relapse, J. A. M. A **130**: 474 (Feb 23) 1946 Darby, W J, Jones, E, and Johnson, H. C Science **103**: 108 (Jan 25) 1946

[2] Kornberg, A; Daft, F S, and Sebrell, W H Proc Soc Exper Biol & Med. **58**: 46 (Jan) 1945 Day, P. L., and others: J. Biol Chem **157**: 423 (Jan) 1945

[3] Endicott, K M, Daft, F S, and Ott, Maurene The Bone Marrow in "Folic Acid" Deficiency, Arch Path **40**: 364 (Nov-Dec 1945)

These studies emphasize the profound fundamental effect of folic acid on hemopoiesis and leukopoiesis and invite further investigations on the mode of action of this substance in blood formation.

FINANCIAL SUPPORT OF MEDICAL SCHOOLS

The war dealt a serious blow to the quality of medical education. The failure of the Selective Service System to provide for the training of scientists has already resulted in a serious deficiency of instructors, particularly in preclinical subjects. The rosters of candidates for Doctor of Philosophy degrees in our larger universities have been largely nonexistent for some four or five years.

A further threat to the quality of medical education lies in financial developments involving the budgets of our medical schools. Dr. Frank E. E. Germann[1] pointed out in a recent issue of *Science* that the current salaries in effect for instructors in science are such as to make it virtually impossible to attract qualified men and women to these institutions as teachers. He says "A small number of our highly endowed educational institutions have been able to hold and attract outstanding scholars because of their higher salary scales, but the average private or state-supported institution has been forced into mediocrity." He asks "What future can we promise young men and women holding pre or postdoctoral fellowships at $1,800 to $3,000 when we still offer $2,000 for assistant professors and require that they have the doctorate degree? What chance do we have to secure a competent teacher in science when a full professor, after thirty years of service, may never reach a salary of $4,000?"

The failure to provide adequate salaries can be attributed in part to the decreased endowment income of recent years, which, estimates indicate, has lost the medical schools about one third of their endowed income. Other factors are operating to reduce funds available to pay teachers in medical school. Faculties are being increased in numbers with the return of men who have been on leave for military or other government assignments. Income from fees for tuition will decrease, sharply in some instances, because the deceleration of the medical curriculum will provide fees to the school for only three fourths of the calendar year instead of the entire year. Fees collected will also be reduced by reductions in enrolments. State schools will receive smaller sums because the Army and Navy medical school programs paid out-of-state tuition fees which are often considerably greater than the fees charged residents of the state in normal times. With the termination of the military medical school programs these state universities will be returning to the normal lower fee schedule.

As a result of these developments a serious lowering of standards in medical education may be anticipated. Every means must be explored to combat such tendencies. Increased endowments must be sought, perhaps especially from industry, which benefits largely from improvements in science instruction and research. The financial structure of most of our states is now such that considerably increased sums could be employed in medical education without greatly taxing state resources. Bills now pending before Congress provide primarily for the support of scientific research and training fellowships. Little if any consideration is given to the equally important financial strengthening of our whole structure of medical education. An annual budget of $350,000 for a small medical school may be the minimum goal which should be sought by all medical schools. Unfortunately, an appreciable number of our medical schools has not reached this minimum standard.

MULTIPLE BACTERIOSTASIS

A new method of preventing the development of acquired drug resistance in pathogenic micro-organisms is suggested by Carpenter and his associates[1] of the Department of Bacteriology, University of Rochester. Investigators studied in vitro the acquired resistance of five originally nonresistant strains of gonococcus against four bactericidal agents. The four bacteriostatic agents were sodium sulfathiazole, rivanol lactate, promin and penicillin. These represented four different types of antibiotic agents and were tested both singly and in combination.

The five gonococcus strains were grown in a Douglas broth plus 5 per cent rabbit serum with gradually increasing concentrations of each agent or combination. All cultures were transferred every forty-eight hours for four months to the same concentration of the drug or combination in which they were growing and to a greater concentration. The degree of acquired drug resistance varied with individual strains. Thus one strain acquired a 1,280-fold resistance to sodium sulfathiazole by the end of four months. A second strain acquired but a 17-fold drug resistance. The average for all five strains was a 700-fold increase in sulfathiazole resistance. The average acquired resistance to rivanol lactate was 80-fold and to penicillin 182-fold. With promin the increase was but 9-fold.

A quite different result was obtained when three or more of these drugs were mixed, each of the drugs being used in a third or a fourth of the maximum concentration permitting growth. Thus with a mixture of sodium sulfathiazole, ravinol lactate and promin the average acquired resistance was but 10-fold. With the addition of penicillin the increase in drug resistance was reduced to zero. Under these conditions penicillin completely inhibited the development of acquired resistance to the triplicate bacteriostatic agent. In the same mixture the gonococcus did not acquire a penicillin resistance.

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[1] Germann, Frank E. E.: Science **103**: 68 (Jan. 18) 1946.

[1] Carpenter, C. M.; Bahn, J. M.; Ackerman, H., and Stokinger, H. E.: Proc. Soc. Exper. Biol. & Med **60**: 168 (Oct.) 1945.

Whether or not a similar mutual inhibition of acquired drug resistance takes place under clinical conditions has not yet been determined. Carpenter does not suggest a theory to account for this mutual inhibition. He has no doubt discovered a basic biologic phenomenon that may in time prove to be of major clinical interest.

THE ANEMIA OF CHRONIC INFECTIONS

The frequent occurrence of anemia during chronic infections, such as empyema, endocarditis and osteomyelitis, is well known. Also clinical experience has shown that this type of anemia is almost always refractory to the usual therapeutic measures. The administration of iron, either orally or intravenously, for example, has little beneficial effect.

Recently a careful study of the utilization of iron in a series of patients with chronic infections has been reported by Wintrobe and his associates.[1] Analyses showed that the plasma iron values of the patients were consistently much lower than normal, the average for 19 patients being 29 micrograms per hundred cubic centimeters in contrast to an average of 120 micrograms per hundred cubic centimeters for 20 normal persons. The oral administration of iron to these patients did not result in a significant increase in the iron content of the plasma, in sharp contrast to the results in normal persons. There was an accompanying increase in serum copper values, a phenomenon observed in a number of types of anemia in which there is an increased demand for iron for hemoglobin regeneration.[2] Further analyses [1] demonstrated that both the erythrocyte protoporphyrin and urinary coproporphyrin values were higher than normal in the patients with infections. The Utah investigators therefore advance the explanation that the anemia of chronic infections is a result of a failure in the utilization of iron for hemoglobin regeneration during chronic infections owing probably to some unknown "persistent and urgent demand for iron to fulfil some function in relation to infection which has a greater priority for iron than hemoglobin formation." In support of the latter explanation it is pointed out that there is an accumulation and fixation of iron in inflammatory tissue [3] and in the reticuloendothelial system of mice during infections.[4]

Continued experimental studies of this thesis should prove of importance in elucidating the etiology of the anemia of chronic infections and in pointing the way to a more rational adequate therapy.

Current Comment

HEPARIN

Increased interest in the use of heparin for the prevention and treatment of thrombosis has developed with the availability of preparations sufficiently pure to permit their parenteral introduction. The development of the barium and sodium salts of heparin and of improved bioassay methods have aided in the production of standardized heparin preparations better than those previously obtainable. While the anticoagulant action of heparin appears quickly after its administration, this effect fades within a few hours, in contrast to the delayed but prolonged activity of the other anticoagulant, dicumarol. Repeated intravenous injections of solutions of heparin or continued venoclysis are therefore essential when an anticoagulating effect extending over days or weeks is desired. Such effects are required in the treatment of bacterial endocarditis, phlebothrombosis, thrombophlebitis, postoperative pulmonary embolism, frostbite and repair of vascular injury.[1] This method of heparin administration is cumbersome, expensive and not free from serious complications (hemorrhages) through inadvertent overdosage (Katz and Elek [1]), and Loewe and Rosenblatt [2] recently introduced a new method of subcutaneous injection of heparin by incorporating this agent into Pitkin's menstruum, consisting of gelatin, dextrose, glacial acetic acid and water, which, it is claimed, achieves a consistent, retarded and equal release of the anticoagulant from the vehicle into the tissue. Heparin, when dissolved in this medium, should not be given oftener than every two to three days to insure adequate heparinization, which is accomplished when the coagulation time of the blood fluctuates between thirty and sixty minutes. Ephedrine may be added to the vehicle to retard further the absorption of the anticoagulant from its deposit. Loewe and his associates have used this medium in an appreciable number of cases of bacterial endocarditis, phlebothrombosis and frostbite without encountering apparently any untoward reactions attributable to the heparin. Future investigations made in a larger number of cases however must show whether or not this good record can be maintained. The amount of fat tissue, and thus the degree of vascularization at the site of deposit, influences the speed of absorption of the heparin from the menstruum into the blood. A similar effect may be exerted by the massaging action of contracting muscles or by outside pressure occurring in changes of position of the patients under treatment. Some difficulties also may be confronted in checking the untoward reactions elicited by overdosage or by excessively speedy absorption of the heparin. Injection of whole blood or protamine to neutralize the free heparin and the compression of the tissue surrounding the depot, or the application of cold to the site of deposition so as to slow the absorption of the heparin, has been recommended as a countermeasure. Whether or not such procedures are adequate in all cases to overcome quickly serious hemorrhagic tendencies remains a matter of further study.

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RADIOACTIVE PHOSPHORUS AS A THERAPEUTIC AGENT

An extensive study of radioactive phosphorus as a therapeutic agent has been carried out in the Mallinckrodt Institute for Radiology and the department of internal medicine of the Washington University, St. Louis. The recent report[1] on results of this study proves conclusively that radioactive phosphorus (P^{32}) "emits beta-rays capable of producing a profound radiation effect on tissues" yet can be administered without harm to the patient. P^{32} especially affects the bone marrow; leukopenia, thrombocytopenia and anemia may be produced. The final dosage in any case must be determined by blood and marrow examinations and by general clinical observations. The standardization of the assay of radioactive phosphorus is discussed by Kamen.[2] The therapeutic results obtained with radioactive phosphorus in myelogenous and lymphatic leukemia were much the same as those obtained with x-rays but without any radiation sickness. Hodgkin's disease, lymphosarcoma, reticulum cell sarcoma and multiple myeloma do not respond to P^{32} as favorably as to x-rays. As yet evidence has not been obtained of any therapeutic effect by P^{32} on mycosis fungoides, xanthomatosis, melanoma, Ewing's tumor, carcinoma of the breast or of the gallbladder, or monocytic leukemia. The main result of a positive nature from the work at Washington University is the confirmation in 30 cases that radioactive phosphorus "is probably the best therapeutic agent available at the present time for polycythemia vera." Almost complete remissions are obtainable, but the effect on the duration of life is not yet known. When the diagnosis has been made, 3.5 to 4 millicuries of P^{32} is injected intravenously. If the count remains above 6 million, a second injection of 1 to 3 millicuries is given in about ninety days. In the meantime, if it seems advisable, 500 cc. of blood may be removed daily until the count comes down to 6 million or so. Many patients do not require a second injection. Evidently P^{32} has a selective action on erythropoiesis. By trial and error progress has been made in the treatment of disease with a substance made radioactive by means of the cyclotron.

NEW FACTOR PROPOSED IN GENESIS OF GOITER

Lack of iodine may not be the sole cause of simple goiter. Recently Greenwald[1] reviewed the evidence regarding the early history of goiter in the Americas, in New Zealand and in England. Examination of early reports, he says, does not disclose the presence of goiter in New Zealand or in the Americas prior to the appearance of Europeans. In each instance the earliest reports on the occurrence of goiter in these areas were among white men and women; therefore Greenwald concluded that endemic goiter did not exist in the natives of the Americas or New Zealand until Europeans arrived. He also discusses the variation in the incidence of goiter and epidemic outbreaks as reported in the literature. As a result of this review he suggests that one factor in the production of goiter may be a biologic agent, possibly a virus, which was brought into Derbyshire, England, from Italy in 1717 with the introduction of silk throwing and into the Americas and New Zealand by white immigration. Although this is an interesting hypothesis, the evidence thus far presented is hardly convincing; most epidemiologists will require more critical evaluation before accepting it.

MOTOR DRIVING AND EPILEPSY

In an attempt to clarify the status of the epileptic as motor vehicle drivers and to provide a basis for state laws and regulations for these drivers, Glaser and Irons[1] sent a detailed questionnaire to 127 members of the International League Against Epilepsy. On the basis of the answers received it is recommended that "epilepsy or other conditions causing lapse of consciousness with loss of motor or sensory control should be made reportable." (In California epilepsy is reportable to the State Department of Public Health and the State Department of Motor Vehicles.) State legislation should be enacted which prevents persons with epilepsy from driving motor vehicles unless free from seizures for a three year period. Nocturnal seizures or an aura should not be considered safety factors. Persons with secondary epilepsy or other syndromes with lapse of consciousness should not be permitted to drive. Licenses may be issued to them or restored at an earlier period when the seizures are under medical control. A diagnosis of epilepsy should be made on a clinical basis with the electroencephalogram used only to supplement the clinical diagnosis.

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MEDICINE AND THE WAR

ARMY

HISTORY OF MEDICAL DEPARTMENT IN WORLD WAR II

An Advisory Editorial Board on the History of the Medical Department in World War II was recently established in the Office of the Surgeon General. The board will advise and assist the Surgeon General in the formulation of overall plans and policies relative to the preparation and publication of the medical portion of the War Department History of World War II. It will be concerned primarily with the organizational aspects of the history and the method of presenting historical material covering the operational and clinical experience of the Medical Department in all major commands of the Army.

The following have been appointed members of the Advisory Editorial Board:

Col. Albert G. Love, M. C. (retired), chairman.
Major Gen. Paul R. Hawley, U. S. Army (retired).
Brig. Gen. Raymond A. Kelser, U. S. Army (retired).
Brig. Gen. Raymond W. Bliss, U. S. Army.
Brig. Gen. Malcolm Grow, U. S. Army.
Brig. Gen. Stanhope Bayne-Jones, U. S. Army.
Col. Paul I. Robinson, M. C.
Col. Michael E. DeBakey, M. C.
Lewis H. Weed, M.D.
Morris Fishbein, M.D.
J. Ben Robinson, D.D.S.
Richard H. Shyrock, Ph.D.
Major John J. Lentz, M.A.C., recorder (without vote).

"THE WELCH STORY" ON EXHIBIT

"The Welch Story," a pictorial history of the establishment and operation of Welch Convalescent Hospital, Daytona Beach, Fla., is on exhibit in Hospital and Domestic Operations Division, Office of the Surgeon General, in room 2E528, the Pentagon.

The idea of such an illustrated record was first conceived by members of the Hospital and Domestic Operations Division, who found that neither the Library of Congress nor the National Archives has any comprehensive material on convalescent hospitals of past wars. Through their efforts, in collaboration with the patients and the hospital staff of Welch Convalescent Hospital, "The Welch Story" was written, illustrated and bound.

In addition to the copy on display there, one will be placed in the Library of Congress as a permanent record and another will be furnished the Brooke Army Medical Center, Fort Sam Houston, Texas, for use as an instruction aid.

ARMY AWARDS AND COMMENDATIONS

Colonel E. R. Long

Col. E. R. Long, chief consultant in tuberculosis, Office of the Surgeon General, was recently awarded the Legion of Merit for his work in the "initiation and development of standards and measures for the detection of tuberculosis." Colonel Long's distinguished service in also establishing "priceless permanent files of chest x-ray films of army personnel," together with his methods of tuberculosis detection, was "of outstanding and lasting significance to the public health program of the country." Prior to entering the Army, Colonel Long was director of the Henry Phipps Institute and professor of pathology at the University of Pennsylvania School of Medicine. He graduated from Rush Medical College, Chicago, in 1925 and was commissioned in the Army in July 1942.

Major Milton Friedman

The Legion of Merit was recently awarded to Major Milton Friedman at the Army Medical Center, Washington, D. C. The citation which accompanied the award stated that Major Friedman, during his service as chief of the Radiation Therapy Section at Walter Reed General Hospital from May 1942 to January 1946, had "invented many new and improved instruments and technics for the treatment of malignant growths." The citation commended Major Friedman for "his services rendered with unselfish devotion to the welfare of the sick and wounded" and ended with the statement that his service rendered would be "of lasting benefit to mankind." Dr. Friedman graduated from George Washington University School of Medicine in 1926 and entered the service May 10, 1942.

Captain T. Philip Dann

Capt. T. Philip Dann, St. Petersburg, Fla., was recently awarded the Bronze Star "for distinctive heroism in connection with military operations against the enemy on March 23, 1945 near Dexhein, Germany. While supporting the crossing of the Rhine River at Dexhein, the aid station was subjected to enemy bombing, strafing and artillery fire. Despite imminent danger and with complete disregard for personal safety, Captain Dann, a station platoon leader, rendered medical assistance to the wounded and carried those without shelter to places of safety during the height of the attack. He alleviated their suffering and arranged for speedy evacuation of all wounded men. His heroic action and devotion to duty aided immeasurably in the saving of many lives and reflect great credit on himself and the Medical Department." Dr. Dann graduated from Louisiana State University College of Medicine in 1943 and entered the service Jan. 4, 1944.

Colonel Edward D. Churchill

Col. Edward D. Churchill, Boston, who was responsible for the introduction of reparative surgery in the base hospitals of the Mediterranean Theater of Operations during the war, was recently presented with the Distinguished Service Medal. Dr. Churchill is also the recipient of the Legion of Merit (The Journal, Aug. 18, 1945, p. 1170). He graduated from Harvard Medical School, Boston, in 1920 and entered the service Jan. 10, 1943.

Lieutenant Colonel Roderick G. St. Pierre

The Bronze Star was recently presented to Lieut. Col. Roderick G. St. Pierre, Portland, Ore., "for meritorious services as a member of the Advance Section Communications Zone, work which contributed materially to and was beneficial to our cause." Dr. St. Pierre graduated from Georgetown University School of Medicine, Washington, in 1933 and entered the service Oct. 10, 1941.

Colonel John C. Burch

The Legion of Merit was recently awarded to Col. John C. Burch, Nashville, Tenn. Dr. Burch was chief of surgical service, Burke General and Convalescent Hospital, Fort Sam Houston, Texas, from August 1942 to July 1945. Dr. Burch graduated from Vanderbilt University School of Medicine, Nashville, Tenn., in 1923 and entered the service Aug. 24, 1942.

Lieutenant Arthur L. Rich

The Bronze Star was recently awarded posthumously to Lieut. Arthur L. Rich, Brooklyn, "for heroic action in connection with military operations against the enemy from Feb. 28, 1945 to March 6, 1945 in Germany." Dr. Rich graduated from the Long Island College of Medicine, New York, in 1939 and entered the service March 24, 1942.

Captain Nicholas A. Novalis

Capt. Nicholas A. Novalis, Long Island City, N. Y., was recently awarded the Bronze Star "for heroic action in the D day invasion." Dr. Novalis graduated from the New York Medical College, Flower and Fifth Avenue Hospitals, in 1937 and entered the service Jan. 28, 1941.

PUBLIC HEALTH SERVICE

INSTRUCTIONS FOR PUBLIC HEALTH CLAIMANTS

Instructions to eligible public health claimants for purchasing surplus property at a 40 per cent discount were recently made available by the U. S. Public Health Service, Robert C. Ayers, director, War Property Distribution, Federal Security Agency, announced. A 40 per cent discount from "fair value" will be granted eligible public health claimants under regulation 14 issued by the former Surplus Property Administration. Included among eligible claimant groups are state, county and local official public health agencies, such as health and sanitation departments, water works, sewerage systems and garbage and disposal plants. Also entitled to the discount are hospitals operated by nonfederal governmental agencies, nonprofit hospitals, clinics and public health research organizations, schools of nursing medicine, dentistry, public health and pharmacy, and certain miscellaneous nonprofit groups organized primarily to promote the public health.

To qualify for a price discount, a public health institution or instrumentality must be either an instrumentality of a state or a local government or tax exempt under section 101 (6) of the Internal Revenue Code and organized primarily for promotion of public health. It must also show that the property is for its own use to fill a legitimate need and will be used to promote the public health, and its application must be approved by a Public Health Service representative. Applicants in doubt of their eligibility should consult the nearest Public Health Service representative, Office of Surplus Property Utilization, whose address is listed in the instructions.

Inquiries concerning availability of surplus foods should be directed to the United States Department of Agriculture, Production and Marketing Administration, attention Surplus Property, Washington 25, D. C.

Copies of the instructions may be obtained from the Office of Surplus Utilization, U. S. Public Health Service, Railroad Retirement Building, Washington 25, D. C., and from the U. S. P. H. S. representative in the War Assets Corporation regional consumer goods office.

APPOINTED HEAD OF DIVISION OF NURSING

Dr. Thomas Parran, Surgeon General of the U. S. Public Health Service, recently announced the appointment of Miss Lucile Petry, head of the U. S. Cadet Nurse Corps, as chief of the new Division of Nursing. Miss Petry was one of the first nurses to be commissioned in the Regular Corps of the Public Health Service. Her rank while serving as chief of a division is Nurse Director. Miss Petry will advise the Surgeon General regarding plans, programs and policies for the service in relation to nursing activities. Among these are the recruitment and training of graduate nurses, standards for nursing practices and personnel, and projects for studies of and research in nursing and those involving nursing.

MISCELLANEOUS

MEDALS OF MERIT AWARDED TO THREE PHYSICIANS

Drs. Francis Gilman Blake, president of the Army Epidemiological Board, Alfred Newton Richards, chairman of the Committee on Medical Research, Office of Scientific Research and Development, from July 16, 1941 to Sept. 2, 1945, and Lewis H. Weed, chairman of the Division of Medical Sciences, National Research Council, were recently awarded Medals for Merit by Major Gen. Norman T. Kirk, which were personally signed by President Truman.

Dr. Blake, dean of Yale University School of Medicine, New Haven, Conn., has been assisting the Army since 1940. For a time he served as director of a special commission which the Surgeon General and the United States of America Typhus Commission sent to New Guinea to investigate scrub typhus fever. The citation accompanying the award was addressed to "Francis Gilman Blake, A.B., M.A., M.D., Sc.D., eminent physician and scientific investigator, leader in curative and preventive medicine, wise and able administrator, devoted servant of health of the armed forces" and he was cited "for exceptionally meritorious conduct in the performance of outstanding services as consultant to the Secretary of War and president of the Army Epidemiological Board. Through his organization and direction of the Army Epidemiological Board since its establishment by the Secretary of War in January 1941, Dr. Blake has guided investigations, policies and measures which have safeguarded the health of troops. He has directed research and the applications of research which have resulted in decrease of infectious diseases at army posts and stations in this country and overseas and which have led to development of new protective measures. He has administered the Army Epidemiological Board as a means for preparation in advance of the outbreak of the war and as an effective weapon to combat communicable diseases during the war. In addition to his constant advisory assistance and supervision of the activities of the ten commissions under the Army Epidemiological Board he has contributed benefits by his own personal participation in field work, under campaign conditions, to the understanding and control of scrub typhus fever, one of the most serious hazards to the health of troops in the Southwest Pacific Area. In his capacity as trusted adviser on the health of the Army and as leader in investigation and control of influenza and other epidemic diseases in the Army, Dr. Blake has rendered courageous and exceptionally meritorious service to the nation."

In 1941 Dr. Richards, vice president in charge of medical affairs and professor of pharmacology at the University of Pennsylvania, was appointed chairman of the Committee on Medical Research. Since that time he has directed the committee's activities toward solving important medical problems embracing all phases of preventive and therapeutic medicine. His citation was "for exceptionally meritorious conduct in the performance of outstanding services to his country. Dr. Richards was directly responsible for organizing the program of research in military medicine. He initiated and supervised scientific research in the broad field of medical problems relating to the preparation for the war and for its conduct, and mobilized scientific personnel in specialized fields for intensive research for the Army and the Navy. Under Dr. Richards' inspiring leadership the program for the critical testing and mass production of penicillin was brought to a successful conclusion. The result was a material reduction in the pain, suffering and death necessarily incident to a prolonged war. Dr. Richards' vision and foresight were responsible for the organization of the most comprehensive attack on malaria which the world has ever seen. The astonishing accomplishments of this program played a substantial and often a decisive part in the victories of our armed forces. Both from a strategic and a humanitarian standpoint Dr. Richards' wartime contribution to his country has been of tremendous importance."

Dr. Weed, director of the Johns Hopkins University School of Medicine, Baltimore, and professor of anatomy at that school, has served as chairman of the Division of Medical Sciences, National Research Council, since 1939. Currently he is also serving as chairman of the National Advisory Committee of the American Red Cross. The citation, in which Dr. Weed was hailed as "eminent scientist and medical administrator," specified his "exceptionally meritorious conduct in the performance of outstanding services" and explained that "by his vision and energetic action Dr. Weed has rendered invaluable service to his country in the mobilization of eminent civilian specialists and through the stimulation and support of scientific projects which to so large an extent formed the basis of effective measures for the prevention and cure of diseases and battle injuries among the armed forces of the United States."

PHYSICIANS SEPARATED FROM SERVICE

ARMY MEDICAL CORPS OFFICERS RECOMMENDED FOR/OR RELIEVED FROM ACTIVE DUTY

California

Church, Claude H., Lt. Col., 1191 Spruce St., Berkeley.
Cook, Orrin S., Lt. Col., 1127 11th St., Sacramento.
Crockett, Herbert G., Major, 3531 Griffith Pk., Los Angeles.
Crump, John H., Capt., 1848 E. 15th St., Long Beach.
Davis, Andrew S., Capt., 3022 E. 14th St., Oakland.
Day, Boston M., Major, 450 Sutter St., San Francisco.
De Busk, Fred G., Lt. Col., 1600 Beverly Dr., Visalia.
Freidin, Morris, Capt., 1865 W. 39th St., Los Angeles.
Gallup, Charles A., Capt., 1930 Wilshire Blvd., Los Angeles.
Gianelli, V. J., Lt. Col., % J. B. Gianelli, 22 S. Center, Stockton.
Goerke, Lenor S., Major, 44 Pershing Ave., Woodland.
Gold, Rubin L., Major, 1559 Francisco St., San Francisco.
Goldstein, Louis B., Major, 758 33rd Ave., San Francisco.
Gusinow, Nathan R., Capt., 6227 W. Lindenhurst, Los Angeles.
Hall, Halle O., Capt., U. S. Vet. Hosp., W. Los Angeles.
Halter, Bert L., Major, 3878 Clay St., San Francisco.
Hamlin, John W., Capt., Tahoe City.
Hanna, Curtis M., Lt. Col., 3160 Palm St., San Diego.
Hanna, Ralph, Capt., 6671 Drexel Ave., Los Angeles.
Hickey, Norman G., Major, 2904 Live Oak St., Huntington Pk.
Hogue, William J., Major, 2669 Walnut St., Huntington Park.
Jones, Richard P., Capt., 541 42nd St., Sacramento.
Kansora, C. P., Capt., 1481 Plymouth Ave., San Francisco.
Kennedy, Charles R., Major, 1233 Olive St., Paso Robles.
Kilgore, George L., Major, 2478 Rosecrans St., San Diego.
Kobayashi, Norman T., Capt., 16212 Orchard Ave., Gardena.
Lawrence, Herbert, 1st Lt., 822 Pacheco St., San Francisco.
Leeds, Sanford E., Lt. Col., 325 15th Ave., San Francisco.
(Name changed from: Levy, Sanford Edgar.)
Levitin, Joseph, Lt. Col., 516 Sutter St., San Francisco.
Merrill, Lea W. Jr., Capt., 929 Colusa Ave., Berkeley.
Rand, Fredrick S., Major, 1578 E. Chevy Chase St., Glendale.
Roberts, Paul C., Capt., 244 K St., Eureka.
Rosen, Morris S., Capt., 1740 Broadway, San Francisco.
Ruden, Simon J., Capt., 313 F St., Eureka.
Soforenko, Harry, Major, 224 N. Kenmore, Los Angeles.
Stehly, Charles C., Capt., 156 S. Meredith Ave., Pasadena.
Tucker, Hyman, Major, Agnew State Hospital, Agnew.
Weks, Carrol L., Capt., 1057 Queen Anne Pl., Los Angeles.
Wilson, Ira H., Capt., 111 N. Freeman, Oceanside.
Wolfsen, Homer R., Capt., 5868 Picardy Dr., Oakland.

Illinois

Bell., Donald I., Capt., Evanston Hosp. Assoc., Evanston.
Berard, LeRoy H., Capt., 1050 N. Hayes Ave., Oak Park.
Berman, Benjamin B., Capt., 1303 St. Louis Ave., East St. Louis.
Bianco, Peter B., Major, 400 W. 16th St., Chicago.
Boylston, George A., Major, 220 Broadway, Wilmette.
Britton, James H., Capt., 1957 23d St., Moline.
Brosnan, John J., Capt., 2002 W. 69th Pl., Chicago.
Brown, Cecil D., Major, 923 Monroe Ave., River Forest.
Brown, Wendell W., Major, 317 W. Main St., Collinsville.
Buckley, Joseph H., Capt., 3713 Wabansia Ave., Chicago.
Burroughs, Oscar J., Capt., 922 W. Eastwood Ave., Chicago.
Cervera, Dominic L., Capt., 3440 W. Franklin Blvd., Chicago.
Cesare, Antonio G., Major, 11051 S. Ave. J., Chicago.
Conti, James G. Jr., Lt. Col., 124 N. Parkside Ave., Chicago.
Cox, Elwood H., Capt., Mount Pulaski.
Crabtree, Joseph P., Major, 402 S. Yale Ave., Villa Park.
Cross, Roland R. Jr., Capt., Dahlgren.
Cumming, Thomas St., Major, Gardner.
Day, Robert F., Capt., 13301 Brandon Ave., Chicago.
Dillman, Howard B., Major, Flora.
Doktorsky, Abraham I., Capt., 1200 N. Ashland Ave., Chicago.
Firfer, Bourke, 1st Lt., 7458 Kingston Ave., Chicago.
Gannon, Paul A., Capt., 420 N. Chicago St., Pontiac.
Gilfillian, Homer John Jr., 1st Lt., 1629 Hampshire, Quincy.
Gish, Rutledge E., Major, 2001 Forest Ave., Eldorado.
Golden, Maurice J., Major, 3460 Lawrence Ave., Chicago.
Green, Alan D., Capt., 6823 N. Greenview Ave., Chicago.
Grotjahn, Martin, Capt., 5429 East View Park, Chicago.
Hall, Carl B., Major, 809 Central, Wilmette.
Kapov, Kozme F., Capt., 6613 Normal Blvd., Chicago.
Kenward, Roy L., Capt., Melvin.
Ketterer, Francis H., Major, Breese.
Kieffer, John P., Capt., 1505 Arthur Ave., Chicago.
Kleinman, Samuel B., Major, Chicago.
Kobrin, Meyer W., Capt., 1506 S. Keeler Ave., Chicago.
Korey, Herman G., Capt., 5465 S. Everett, Chicago.
Koucky, John D., Lt. Col., 1106 Keystone Ave., River Forest.
Milroy, Robert A. Jr., Capt., 300 S. 4th St., Aurora.

Illinois—Continued

Mooney, Felix P., Capt., 510 N. Goodwin Ave., Urbana.
Morris, Donald P., Major, 534 Linn St., Peoria.
Padorr, David, Capt., 1037 North Shore, Chicago.
Patchen, Paul J., Capt., 2536 E. 73rd St., Chicago.
Paull, Murry M., Capt., 1128 Hyde Park Blvd., Chicago.
Rosenthal, Carl, Major, 4417 N. Lawndale, Chicago.
Serritella, Rocco V., Capt., 1012 S. Ashland Blvd., Chicago.
Skeele, William A., Capt., 2120 Main St., Alton.
Skowron, John J., Capt., 5735 Wilson Ave., Chicago.
Van Kirk, Frank W. Jr., Capt., 105 E. Delaware Pl., Chicago.
Walzer, Israel, 1st Lt., 1835 W. Harrison St., Chicago.
Watters, Charles L., Capt., 217 S. State St., Geneseo.
Wendorf, Albert, Capt., 2008 Humboldt Blvd., Chicago.
Worsley, Hugh H., Capt., 6066 Forest Glen, Chicago.
Yonker, William, Major, 8945 S. Oakley Ave., Chicago.

New Jersey

Butenas, Joseph J., Capt., 300 1st Ave., Elizabeth.
Chesnick, Reuben B., Capt., 135 Woodland Ter., Oaklyn Manor.
Chodosh, Maurice A., Capt., 606 Roosevelt Ave., Carteret.
Close, Byron H., Capt., Main St., Bloomingdale.
Cohen, Samuel A., Major, 477 Jersey Ave., Jersey City.
Cornish, Charles H., Major, 673 Prospect St., Maplewood.
Di Nicolantonio, V. J., Capt., 3121 Atlantic Ave., Atlantic City.
Epstein, William M., Capt., Hotel Suburban, East Orange.
Farber, Herbert R., Capt., 178 Lawrence Pl., Paterson.
Friedenberg, Sidney, Capt., 2990 Alabama Rd., Camden.
Haines, Emerson S., Capt., 500 Eight Ave., Asbury Park.
Harris, Sidney, Capt., 420 E. 7th Ave., Roselle.
Hersohn, W. W., Major, 114 S. Illinois Ave., Atlantic City.
Holmes, Joseph H., Capt., 224 Hickory Ave., Tenafly.
Horowitz, Herman J., Lt. Col., 872 Broad Ave., Ridgefield.
Kuite, George B., Major, 435 Speedwell Ave., Morris Plains.
Lance, Elton W., Lt. Col., 125 W. Milton Ave., Rahway.
Liddy, Frank J., Major, Mahwah.
Luippold, Eugene J. Jr., Capt., 130 Fairview Ave., Boonton.
Lustig, Melvin, Capt., 349 Fabyan Pl., Newark.
McLane, A. D., Lt. Col., 498 Engle, Englewood.
Mancene, Edward M., Capt., 145 Marshall Ave., Little Ferry.
Schram, William S., Capt., 252 Bergen Ave., Kearny.
Scott, John J., Major, 6 Zorman Pl., Weehawken.
Sedgwick, Cornelius E., 1st Lt., 113 Union Rd., Roselle Park.

New York

Bass, Louis, Capt., 347 E. 173d St., New York.
Baudo, Salvator J., Capt., 21-44 41st St., Long Island City.
Becker, Benjamin J., Capt., 9349 212th Pl., Queens Village.
Belgorod, Samuel H., Major, 55 W. 11th St., New York.
Benson, Murray, Major, 721 Walton Ave., New York.
Berens, Abraham, Capt., 263 Eastern Parkway, Brooklyn.
Bogart, Harry, Major, 825 West End Ave., New York.
Bressler, Sydney, Lt. Col., 139 W. 82d St., New York.
Brown, Chester R., Major, 4418 Waldo Ave., New York.
Buchwald, Merwin E., 1st Lt., 1921 Ocean Ave., Brooklyn.
Buckbee, Harold Frederick, Capt., 15 Helmer Ave., Dolgeville.
Clyne, Robert M., 1st Lt., 1470 Taylor Ave., Bronx.
Codik, John G., Major, 464 E. 159th St., New York.
Cohen, Abraham G., Lt. Col., 9 E. 96th St., New York.
Constantino, Joseph G., Major, Ozone Park.
Coriale, Arthur S., Capt., 1021 Conkling Ave., Utica.
Davison, Selvan, Capt., 5 E. 101st St., New York.
De Marco, Mario M., Major, 3389 Sedgwick Ave., New York.
Demo, Robert A., Capt., 66 Willmont St., Rochester.
Dennis, Robert W., Major, 438 N. Main St., Herkimer.
Ettman, Irving K., Major, 1421 Vyse Ave., New York.
Feinberg, Harry, Capt., 634 Miller Ave., Brooklyn.
Fineberg, Seymour K., Capt., 1139 Nelson Ave,, Bronx.
Fishberg, Archibald, Capt., 851 Manida St., Bronx.
Fox, Mark E., Capt., 129 MacDougal St., New York.
Frank, Lawrence, Capt., 1178 E. 9th St., Brooklyn.
Frazell, Edgar L., Capt., 121 E. 60th St., New York.
Friedenson, Meyer, Capt., 711 Walton Ave., Bronx.
Friedman, Herbert S., Major, 676 Riverside Dr., New York.
Gershberg, Herbert, Capt., 1160 Cromwell Ave., Bronx.
Gian, Mario C., Capt., 610 Niagara St., Buffalo.
(Name changed from: Gian-Franceschi, Mario Carlo.)
Gianquinto, William M., Capt., 931 Kent Ave., Brooklyn.
Glenn, Frank, Lt. Col., 329 E. 68th St., New York.
Goldstein, Lester B., 1st Lt., 70 Rockaway Pkwy., Brooklyn.
Goodfriend, Murray I., 1st Lt., 500 Montgomery St., Brooklyn.
Gordon, George B., Capt., 1675 E. 18th St., Brooklyn.

PHYSICIANS SEPARATED FROM SERVICE

New York—Continued

Gould, Adrian G, Col, 12 Irving Pl, Ithaca
Greene, David G, Capt, 42 Ashland Ave, Buffalo
Greenwald, Murray, Capt, 1715 Bath Ave, Brooklyn
Gregg, Robert O, Major, 303 Parsons Dr, Syracuse
Hallemann, George, Capt, 122 Park Ave, Mt Vernon
Hallinger, Earl S Jr, Lt Col, 134 Washington Ave, Endicott
Head, Arthur E, Major, 153 E Main St, Gouverneur
Heldman, Arthur, Major, 2876 Jerome Ave, Bronx
Helman, Charles H, Major, 735 Mace Ave, Bronx
Israel, Benjamin, Capt, 1895 Morris Ave, Bronx
Jones, Augustin, Capt, 28-55 216th St, Bayside
Josephson, Frederick, Major, 142 05 60th Ave, Flushing
Juster, Irving R, Lt Col, 105 Ridge St, Glens Falls
Kammerer, William H, Major, Whitestone, Queens
Kaplan, L, 1st Lt, 1910 Foster Ave, Brooklyn
Karpenski, Stephen J, Lt Col, 132 No St, Auburn
Kempfner, Joseph, Major, 120 E 85th St, New York
Kempner, William J, Capt, 99 08 67th Ave, Forest Hills
(Name changed from Kempner, Mortimer Jay)
Kera, Henry M, Major, 17 Park Ave, New York
Kerr, George K, Capt, 239 Herberton Ave, Port Richmond
Kidder, Russell S Jr, Major, 36 Kenova Pl, Buffalo
Levine, Bernard R, Capt, 1342 Findlay Ave, Bronx
Levine, Samuel N, Capt, 501 Euclid Ave, Elmira
Levy, Edward, Capt, 235 E 22nd St, New York
Levy, Hyman, Capt, 230 Riverside Dr, New York.
Lieberman, David, Capt, 152 S 9th St, Brooklyn
Lipschitz, Samuel, Capt, 723-7 E 182nd St, Bronx
Lucas, Alphonse F, 1st Lt, 45 Oak St, Hornell
Lynch, William G, Capt, 6843 Central Ave, Glendale
Lyon, Ernst F, Capt, 117-01 Park Lane, S, Kew Gardens
McGuigan, Leonard M, Capt, 126 Division St, Amsterdam
Melfi, Domenick J, Capt, 2235 Tiemann Ave, Bronx
Mintz, Bernard J, Lt Col, 170 W 77th St, New York
Miscall, Laurence, Lt Col, 5 Russel Pl, Forest Hills
Molinoff, David D, Major, Smithtown Branch, L I
Montag, Leonard, Capt, 68 63 108 St Forest Hills
Moore, James A, Capt, 490 Western Ave, Albany
Rosenthal, R L, Capt, Willard Parker Hosp, New York
Rudin, Louis N, Capt, Welfare Hosp, Welfare Island
Ryan, Jeremiah E, Capt, Bellevue Hospital, New York
Saltz, Herman P, Capt, 45 Sammis Ave, Huntington
Sanfilippo, Paul J, Major, 25-50 Gilmore St, East Elmhurst
Scacciaferro, Anthony W, Capt, 4016 9th Ave, Brooklyn
Schultz, Jacob P, Major, 843 E 10th St, Brooklyn
Schwartz, Ralph, 1st Lt, 101 East 169th St, New York
Slater, Max, Major, 4115 45th St, Long Island City
Smedal, Sigmund H, Capt, 385 Morris St, Albany
Smith, John J, Major, 525 E 68th St, New York
Sordillo, Sabato-Vincent R, Capt, 1221 York Ave, New York
Steinhausen, Theodore B, Capt, 60 Cathaway Pk, Rochester
Stella, Mario E Capt, 303 West 91st St, New York
Storch, Sidney, Capt, 645 Ocean Parkway, Brooklyn
Zukauckas, E W, Lt Col, 4302 Flatlands Ave, Brooklyn

Ohio

Blackburn, John H, Capt, 1896 N 4th St, Columbus
Bowman, Harold J, Major, 1604 27th St N W, Canton
Bowsher, Robert E, Major, 4505 River Road, Toledo
Brown, John Q, Capt, 2941 Crescent Dr, Columbus
Burroughs, Shepard A, Capt, 4500 Park Ave, Ashtabula
Campbell, Rundle D, Capt, 191 Helen Ave, Mansfield
Chaikin, William E, Capt, 2010 E 102d, Cleveland
Dickey, L C, Capt, 3093 Huntington Rd, Shaker Heights
Donnelly, James H Jr, Capt, University Hosp, Cleveland
Drake, John C, Lt Col, Edgewood Rd, Mt Vernon
Edwards Walter V Jr, Capt, 812 Michigan, Youngstown
Elliott, William E, Major, 217 Simpson St, Alliance
Forrester, Joseph C, Major, 511 Fairwood Ave, Columbus
Franke, William J, Capt, 900 Peerless Ave Akron
Friedman, Leo S, Major, 3854 Spring-house Lane, Cincinnati
Giber, Philip B, Major, 4 N State St, Girard
Harper, E O'N, Lt Col, 16185 Clevıden Rd E, Cleveland
Hauser, Willard E, Capt 4218 Rocky River Dr, Cleveland
Heller, Morris I, Capt, 10113 Pierpont Ave, Cleveland
Howe, Charles E, Lt Col, Westerville
Jacob, John, Capt, 3029 Ludlow Rd Shaker Heights
Kaval, Vincent T, Capt, 12805 Shaker Blvd, Cleveland
Keiser, Harold LeR, Capt, 906 W State St, Fremont
Kingsley, Glenn E, Major, 1160 8th St, Lorain
Klinge, John E, Capt, 910 Main Ave W, Massillon
Krichbaum, William T, Capt, 214 E Maple St, North Canton
Kriz, Joseph R, Lt Col, Lucas County Hospital, Toledo

Ohio—Continued

Krupko, Paul E, Capt, 3590 Farland Rd, Cleveland Heights
Lamkin, Glenn S, Capt, Sardinia
Leviticus, Rene, Capt, 2242 E Market St, Warren
Leyrer, Ralph H, Major, 803 Franklin St, Hamilton
Lombardi, Louis F, Capt, 249 Crosby St, Akron
Mollin, Edwin L, Capt, 175 Merriman Rd, Akron
Piver, William C Jr, Capt, 1818 Farmington, East Cleveland
Rhiel, James I, Capt, 215 W High St, Eaton
Roden, Carl A, Capt, 450 S 2nd St, Hamilton
Schmitker, Max T, Lt Col, 2547 Cheltenham Rd, Toledo
Searle, Clark P, Capt, 225 Charles St, Wyoming
Smith, John J, Capt, 1842 Caldwell Ave, Cleveland Heights
Terrell, Virgil E, Capt, 1360 Giel Ave, Lakewood
Tichy, Vladimir L, Major, 3515 W 98th St, Cleveland
Walzer, Leo, Major, 3166 Redwood Rd, Cleveland

Pennsylvania

Banthy, Harry C, Capt, Imperial Hotel, Reynoldsville
Beatty, W A Jr, Capt, 336 Ave F, Forest Hills, Pittsburgh
Blaker, Martin A, Capt, 765 S 5th St, Philadelphia
Bolich, John A, Major, 717 N Front St, Milton
Boyle, Bruce C, Capt, 223 Marguerite Ave, Wilmerding
Bremer, Harry J, Capt, 246 Greeve St, Conemaugh
Chachkin, Samuel, Capt, 5017 N 10th St, Philadelphia
Chasler, Charles, Capt, 402 Sampson St N W, Pittsburgh
(Changed from Ciaccia, Charles N)
Cohen Samuel F, Capt, 1217 Dekalb, Norristown
Craighill, Margaret D, Lt Col, Woman's Med Col of Pa, Philadelphia
Faries, George B, Major, 7806 Cresheim Rd, Philadelphia
Feltwell, Peter M Jr, Capt, 227 Beaver St, Sewickley
Gerwig, Theodore C Jr, Capt, 1504 Murray Ave, Pittsburgh
Gibson, William B, Lt Col, 40 Drexel Ave, Lansdowne
Goldberg, Solomon Major, 2730 Broadway, Pittsburgh
Greenspon, Samuel E, 1st Lt, 2078 Wilmot St, Philadelphia
Harmeier, John W, Lt Col, 121 University Pl, Pittsburgh
Harwick Ralph F, Capt, 102 N 13th St, Allentown
Hays, Clinton A, Major, 232 E 6th St, Oil City
Heintzelman, George W, Major, Neffs, Lehigh Co
Hibbs, John B, Capt, 51 W Fayette St, Uniontown
Hoch, Vincent A, Capt, 145 Oak St, Butler
Hubbard, Charles C, Col, 150 Stockton Ave, Uniontown
Johnson, Julian, Major, 3400 Spruce St, Philadelphia
Johnson, Leonard Z, Capt, 1528 N 6th St, Harrisburg
Kalstone, Bernard M Capt, 1326 Bailey Ave, McKeesport
Kaplan, Albert J, Major, 6103 N 17th St, Philadelphia
Karmilowicz, Norman A, Capt, 792 Market, Kingston
Katzen, Raymond, Capt, 6000 M 20th St, Philadelphia
Kaufman, Sidney S, Capt, 6386 Ebdy St, Pittsburgh
Keller, Earl B Jr, Capt, 323 Midland Ave, Wayne
Kessler, Carl C, 1st Lt, 1014 Meade St, Reading
Kincov, Jacob, Major, 512 Cattell St, Easton
Kirk, Milo M, Capt 2307 Brownsville Rd, Pittsburgh
Kleinguenther, C J, 1st Lt, 2100 W Cheltenham, Philadelphia
Levan, John B, Lt Col, 401 Oley St, Reading
Levin, Herman H Major, 207 E Boyles Ave, New Castle
Lewine, Yale S, Capt, Jefferson St Beaverdale
Libener, Otto J, Capt, 79 N Vine St, Hazleton
Lombardi Salvatore L, Capt, 5438 Wayne Ave Philadelphia
Lutton, Edward C, Lt Col, 306 W Pearl St, Butler
Yakulis, C W Jr, Capt 340 McKinley, East Vandergrift

Rhode Island

Berrillo Anacleto, Capt 53 Grove St, Providence
Flynn Joseph C, Capt, 559 Cranston St, Providence
Hayes, Walter E Capt 1103 Cranston St Cranston
Hecker, Harry, Capt 445 Pawtucket Ave, Pawtucket
Sherman Bernard I, Major, 1022 Broad St, Providence

South Carolina

Baroody Albert J, 1st Lt, 105 Main St, Timmonsville
Blake, Herbert Capt, 204 Calhoun St Anderson
Coleman Marshall J, Major 120 Coshua St Darlington
Holmes Gertrude R Capt 709 Arlington Ave, Greenville
Jones, William B, Major County Health Dept, Beaufort
Kaufman Samuel, Capt York
McCoy, Edwin R Capt Roper Hosp Charleston
McLain William C Jr Capt 1812 Seneca Ave, Columbia
McNulty Robert B Major, 1633 Heyward St, Columbia
Mayer Orlando B, Lt Col 1527 Devenshire Dr, Columbia

Wyoming

Rosene, William E Capt, Wheatland

MEDICAL OFFICERS RELEASED BY THE NAVY

NAVAL RESERVE MEDICAL OFFICERS RECOMMENDED FOR RELEASE FROM ACTIVE DUTY

Alabama

Kent, James M............Birmingham
Kimbrough, Benjamin B. Jr......Nanco
Stewart, Roddie L..........Birmingham

Arizona

Kimball, Albert P..............Yuma

Arkansas

Hebert, Gaston A..........Hot Springs

California

Bigler, Roscoe H.............Southgate
Brinckerhoff, Albert J.....San Francisco
Campion, George S.......San Francisco
Cosgrove, Clair P..........Los Angeles
Cover, William L........San Bernardino
Crenshaw, Gerald L...........Oakland
Folkenberg, Alvin W...........Glendale
Forman, Joseph B.............Oakland
Goutiere, Vernon G. G....San Francisco
Griffith, Powell W..........Los Angeles
Gustin, James Wm., Jr...Newport Beach
Henderson, Ernest W..........Alameda
Henry, Merlyn G...........Los Angeles
Hidley, Herbert J...........Los Angeles
Hillyer, Edwin A.............Hayward
Johnson, Chester F............Oakland
Johnson, James K.........Los Angeles
Kimball, David C............Coronado
Kitchen, Burton E..............Salinas
Kraft, Rollan W...............Pasadena
Magoon, Leslie B.............San Jose
McCarthy, William D.........Oakland
Millar, Glenn E............Sacramento
Muir, James C.................San Jose
Norwood, Jackson.............Pasadena
Novacovich, George G....San Francisco
O'Connor, Gerald B......San Francisco
Perroden, Chester A......Sherman Oaks
Poulsen, Theodore S......San Francisco
Rogers, Wilbur G..........Los Angeles
Scheffel, Alfred G..........Los Angeles
Scoins, William H.............Altadena
Scott, Walter....................Glendale
Shelden, Charles H. Jr......San Marino
Silvani, Henry L..........San Francisco
Silver, Bernard............Los Angeles
Strang, Theodore A.........Long Beach
Thompson, Ferris W..........Monterey
Tyroler, Frederick N.......Los Angeles
Wagner, Robert L.......San Francisco
Williamson, William T............Colton
Young, Thomas L..........Long Beach
Zealear, David S........San Francisco

Colorado

Altmix, Richard H..............Denver
Dille, Frank McE...............Greeley
Evans, Albert E.................Denver
Hall, Richard H..................Pueblo
Hirst, William R.................Denver
Messenheimer, Myron G.........Denver

Connecticut

Backhus, Louis C...........Waterbury
Bausch, Carl P..........West Hartford
Carvey, Edward V........Wethersfield
Guida, Francis P..........North Haven
Jackson, Albert L.............Waterford
James, Lewis P..........West Hartford
Keefe, Walter J..................Hartford
LaBrecque, Frederick C.......Waterbury
Lincourt, Armand S......Thompsonville
McCrann, Donald J............Bloomfield
Mignone, Joseph...........New Haven
Moore, Donald B.............New Haven
Murphy, Thomas D.......W. Hartford
O'Brien, Francis H.........New Britain
Peacock, Albert U......West Hartford

Connecticut—Continued

Romaniello, Rosso J......West Hartford
Seigle, Stewart P........West Hartford
Taylor, Robert M..........East Haven
Watson, William J.........New Britain
White, John C............New Britain

District of Columbia

Baxter, Marshall D.........Washington
Derzavis, Jack L............Washington
Greenberg, Robert M........Wash. D.C.

Florida

Fitzpatrick, Emmett T.....Miami Beach
Kenaston, Thomas C.............Cocoa
Lawther, Harry C...............Miami
Pearson, Rufus J., Jr.......Coral Gables
Robertson, James C.........Vero Beach
Stewart, Franz H...............Miami

Georgia

Dougherty, Mark S., Jr.........Atlanta
McGeachy, Thomas E...........Decatur
Stearns, Dana P...............Augusta
Victor, Jules Jr...............Savannah

Idaho

Annest, Leonidas.................Declo

Illinois

Anderson, Truman O..........Glenwood
Athey, George L............Beardstown
Baugher, John O..............Chicago
Dorr, Edward M...............Chicago
Burge, Edward S..............Evanston
Egan, William B...............Chicago
Foltz, Herbert Leo.............Chicago
Greeley, Paul W............Winnetka
Grissom, Raymond F..........Oak Park
Hammel, George W............Chicago
Hansen, Stephen J...........Effingham
Hausman, Charles M...........Chicago
Hindman, Joseph F.............Urbana
Koscinski, Leon J..............Chicago
Kurth, Milton E................Chicago
Milroy, John J..........North Chicago
Patton, Robert J............Springfield
Ponzer, Ernest D..............Chicago
Quinn, Francis M..............Chicago
Rice, Herbert R...........Lake Forest
Sharp, Jack M..............Lake Forest
Slepyan, Albert H..........Park Ridge
Snively, William D., Jr.....Rock Island
Stack, Eugene A..........River Forest
Sternes, Frank C..............Chicago
Strauss, Hermand A...........Chicago
Thompson, Ivan..............Evanston
Varzino, Louis S..............Chicago
Waller, George H. Jr.............Maroa
Winters, Kenneth J.......Scales-Mound

Indiana

Bailey, Lawrence S...........Zionsville
Brenner, Andrew M.........Winchester
Hane, Richard L...........Fort Wayne
Leich, Charles F............Evansville
Miller, William E..........South Bend
Pearce, Roy V............Terre Haute
Stewart, Wayne H.........Kendallville

Iowa

Elmore, Ernest F...............Hartley
Goad, Robley R..............Muscatine
Hansen, Russell R.........Storm Lake
Hersey, Nelson L.........Independence
Irwin, Ralph L................Iowa City
Kenefick, John N...............Algona
Laughlin, Ralph M.........Cedar Rapids
McGowan, James P..............Harlan
Powell, Robert A..............Farragut
Waggoner, Charles V. E.........Clinton
Webber, Richard J.........Fort Madison

Kansas

Eckart, DeMerle Emery.......Gardner
Moorman, Victor R..........Nickerson

Kentucky

Butler, Francis H.............Louisville
Crowder, Marion O............Hartford
Shacklette, Cripps B............Shively
Slucher, Richard R.............Buechel

Louisiana

Cain, Frank A...................Rayville
Frederick, Charles O..........Covington
Lally, John F., Jr.........New Orleans
Sonnier, Lee J......................Scott
Taylor, Phillip W.........New Orleans

Maine

Coffin, Ernest L......Northeast Harbor
Hynes, Edward A..........So. Portland

Maryland

Darnall, William R............Rockville
Geschickter, Charles F.........Baltimore
Jeppi, Joseph V..............Baltimore
Moore, Frank R..............Baltimore

Massachusetts

Arbetter, Joseph D..............Saugus
Altman, Isadore.............N. Attleboro
Benson, Harry L............Winchester
Cassaday, Paul B.............Nantucket
Bryan, Charles S., Jr........Cambridge
Donabedian, George..........Worcester
Dorman, Daniel B............Cambridge
Drew, Roger T...................Lowell
Egan, John J. Jr..............Gloucester
Goodwin, Arthur H.............Everett
Hathaway, Louis E., Jr....Longmeadow
Heath, Wilmer P..............Needham
Heller, Hyman..................Webster
Herman, Herbert R.............Hingham
Higgins, Francis H........Chestnut Hill
Hindman, Daniel H...........Laurence
Hopkins, Henry P............Chatham
Lamb, Gordon R.................Boston
MacDonald, A. S. Jr..........Winchester
Marlin, Myer..................Cambridge
McCausland, William A..........Quincy
Miller, Donald G.................Everett
O'Day, John J..................Worcester
Reynolds, Edward J...............Malden
Stevenson, Charles S..........Pittsfield
Suitor, Douglas G...........Springfield
Tierney, Thomas M.............Boston

Michigan

Adler, Sidney....................Detroit
Baer, Louis S................Ann Arbor
Davies, Windsor S.......Grosse Pte. Pk.
Jennings, Robert M..............Detroit
Lichter, Max L...................Detroit
Murphy, Francis J................Detroit
Virga, George M..................Detroit

Minnesota

Anderson, Donald C.............St. Paul
Johanson, Waldemar G.........St. Paul
Larson, Lawrence M........Minneapolis
Martin, Webster C................Duluth
McKenzie, Charles H.......Minneapolis
Mead, Charles H..................Duluth
Merrill, Robert W..................Morris
Mork, Frank E......................Anoka
Schuele, David T...............Chatfield
Sloan, Benjamin C...............St. Paul
Smith, Graham G...................Fulda
Wilder, Thomas C...............Rochester

MEDICAL OFFICERS RELEASED BY THE NAVY

Missouri

Duncan, Ralph E.	Kansas City
Gilfillan, Earl E.	Memphis
Henrickson, Hardin O.	Poplar Bluff
McAlester, Andrew W., III.	Kansas City
McPheeters, James W.	Poplar Bluff
Smit, Herbert M.	University City
Zuber, Harold V.	Kansas City

Nebraska

Bradley, James D.	Lincoln
Elliott, Clarence K.	Lincoln
Garlinghouse, Richard E.	Lincoln
Rosenau, John A.	Scottsbluff
Travnicek, Frank G.	Wilber

Nevada

Cantlon, Vernon	Reno
Sylvain, Gerald J.	Las Vegas

New Hampshire

Doyle, Peter J.	Dover
Gray, Frederick S.	Portsmouth

New Jersey

Barlow, Frank A.	Paterson
Bigelow, Nelson S.	So. Orange
Boyle, Francis L.	Bayonne
Burbank, John H.	East Orange
Carpenter, Cedric C.	Summitt
Chmelnik, Abraham G.	Newark
Ciccone, Edwin L.	Newark
Fischman, Mervin	Irvington
Fissell, George M.	Newark
Frank, Perry	Egg Harbor
Goldfarb, Abraham	Rutherford
Hasney, Frederick A.	West Orange
Mott, Joseph E.	Paterson
Murphy, Thomas W.	Short Hills
Palma, Nicholas	Paterson
Schubert, Roy R.	No. Haledon
Swiney, Merrill A. III	Bayonne
Tebrock, Harry E.	Atlantic City
Thomas, John H.	So. Orange
Van Gieson, Edward J.	Bloomfield
Walker, Nelson C.	Ridgewood

New Mexico

Griffin, John W. Jr.	Riverdale
Roberts, Bennett F.	Albuquerque

New York

Armstrong, John T.	New York
Babcock, Henry H.	New York
Babey, Andrew M.	Brooklyn
Bagg, James F.	Mt. Vernon
Barer, Charles G.	Bronxville
Block, Morris	New York
Boggs, Edward H.	New York
Brown, Lewis W.	Woodmere
Brust, John C. M.	Syracuse
Bugbee, Lucius H. Jr.	Jamestown
Butler, Hugh H.	New York
Cushing, Robert M.	Brooklyn
De Pietro, Joseph	New York
Doll, Leo Joseph L.	Buffalo
Dougherty, Thomas G.	New York
Dubois, John C.	New York
Eilert, John H.	New York
Gackenheimer, Charles D.	Jamaica
Glasser, Benjamin F.	Kew Gardens
Goldberg, Jacob	Saranac Lake
Goldner, Abraham I.	Flushing
Haines, Henry H.	Rochester
Herman, John R.	New York
Higginson, John F.	Queens, L. I.
Hoffeld, George D.	New York
Hollander, Mark B.	New York
Hornstein, Samuel L.	Brooklyn
Hotchkiss, Robert S.	Forest Hills
Humphrey, Henry D.	Lowville
James, William E. S.	New York
Johnson, Porteous E.	Spencer
Koop, Robert F.	Peekskill
Krainin, Philip	New York

New York—Continued

Laughlin, Elmer H.	Brooklyn
Lautzenheiser, Ross B.	Penn Yan
Lewis, Leon	New York
Lhamon, William T.	New York
Martorano, Gerard	New York
Master, Arthur M.	New York
Morrissey, Vincent J.	New York
Osborne, John R.	Middletown
Patrick, Ralph C.	Brooklyn
Ridenour, John W. Jr.	White Plains
Rogoff, Jacob	Brooklyn
Rosenberg, Julius	Brooklyn
Sainsbury, Augustus W.	Canandaigua
Schwedel, John B.	New York
Snodgrass, John J.	New York
Southworth, Franklin C., Jr.	Buffalo
Star, Leon D.	Far Rockaway
Strange, Theodore B.	Albany
Stubenford, William D.	New York
Sulzman, John H.	Troy
Sussman, Leon N.	New York
Tesoriero, Vincent J.	Brooklyn
Thompson, Howard T.	Rochester
Young, George S.	Buffalo

North Carolina

Chambers, Paul J., Jr.	Charlotte
Goddard, David W.	Durham
Grady, Edgar D.	Wilson
Lounsbury, James B.	Wilmington
Morgan, Ralph S., Jr.	Chapel Hill
Norris, Charles B.	Charlotte
Powell, Thurston, G.	Wilminton
Wilson, James M.	Durham

North Dakota

Darner, Charles B.	Fargo

Ohio

Allen, Herbert V., Jr.	Cincinnati
Bennett, Alwyn E.	Cleveland
Bonnot, Bernard Robert	Canton
Bossert, Lester J.	Cincinnati
Butcher, Wendell A.	Lancaster
Byrne. Thomas E.	Mentor
Cassidy, Robert H.	Columbus
Castle, Charles A.	Cincinnati
Clark, Willard C.	Dayton
Davis, Adrain E.	Akron
Fry, Francis O.	Cleveland
Funk, John A.	Coshocton
Gusman, Harry A.	Shaker Heights
Hart, Albert J.	Cleveland
Irving, Richard C.	Conneaut
Jones, Edward H., Jr.	Youngstown
Jones, Stewart R.	Cincinnati
Keogh, Joseph P.	Youngstown
Kerschgens, Lambert J.	Toronto
Pelegrin, Ralph J.	Cleveland
Sherman, John J.	Ironton
Smith, Richard N.	Wooster
Stage, John Taylor, Jr.	Ashland

Oklahoma

Cunningham, John A.	Ada
McKinney, Milam F.	Oklahoma City
Stickle, Arthur W.	Oklahoma City

Oregon

Haugen, Gerhard B.	Portland
Joseph, Robert E.	Portland
Rodda, James M.	Portland

Pennsylvania

Cohen, Harold M.	Pittsburgh
Drapiewski, Joseph A.	Nanticoke
Elliott, Frank R.	Reading
Farrell, Harry L.	Philadelphia
Fetterman, George H.	Castle Shannon
Flook, Samuel E.	Philadelphia
Flory, Clyde R.	Sellersville
Gibbs, Albert G.	West Nanticoke
Good, Ralph D.	Wilkinsburg
Hallowell, Albert V.	North Wales

Pennsylvania—Continued

Hamilton, Aubrey H.	Philadelphia
Hooker, Edgar F.	Bryn Mawr
Jacobs, John B.	Lansdale
Kagen, Gordon A.	Philadelphia
Kooser, John Herman	Irwin
Lehman, John F.	Yeadon
McNeil, Robert J., Jr.	Philadelphia
McNerney, John C.	Philadelphia
Muir, Donald C.	Greensburg
Murchison, Edwin B.	Tyrone
Murphy, John T.	Oliphant
Nicholson, John W., III.	Bryn Mawr
Northrop, David D.	Philadelphia
Patterson, William B.	Crafton
Paull, Thomas	Barre
Pote, Harry Harvey	Philadelphia
Royster, Hubert A., Jr.	Bryn Mawr
Shumway, Norman P.	Philadelphia
Shutt, Thomas J.	Jenkintown
Speelman, James W.	Pittsburgh
Stevens, Selton S.	Scranton
Stewart, William P.	Philadelphia
Swick, Jesse H. II	Beaver Falls
Weston, Kenneth R.	Allentown
Wible, Leroy E.	Pittsburgh

Wisconsin

Aiken, George R.	Bremerton
Biehn, Roy C.	Lakeside
Brazy, Robert R.	Milwaukee
Bruskewitz, Harold W.	Milwaukee
Burpee, George F.	Edgerton
Burzynski, Eugene E.	Watertown
Callaghan, Desmond H.	Hayward
Carroll, Gordon E.	Janesville
Charles, John D.	Wauwatosa
Cowan, Irving I.	Milwaukee
Creswell, Clifford M.	Kenosha
Cunningham, Paul M.	Madison
Dana, Robert L.	Fond du Lac
Davee, Chalmer	River Falls
Dunst, Carl G.	Milwaukee
Eck, Gustave E.	Lake Mills
Fein, Norman N.	Milwaukee
Feldman, Edward I.	Milwaukee
Foster, Mark A.	Madison
Golden, Farrell F.	Ashland
Grundahl, Alvin T.	Mayville
Hanson, Oscar H.	Fort Atkinson
Helmbrecht, Milan G.	Elkhorn
Henke, Samuel L.	Eau Claire
Hudson, Edward D.	Lake Geneva
Ihle, Charles M.	Eau Claire
Jochinsen, Marvin A.	Milwaukee
Kiefer, Edward J.	Milwaukee
Kindshi, Leslie G.	Monroe
King, James J.	Milwaukee
Kinsey, Jack L. V.	Milwaukee
Klopf, Howard M.	Milwaukee
Kroyer, Theodore J.	Walworth
Leonard, Thomas A.	Madison
Moon, Rodger A.	Neenah
Neacy, Clement F.	Williamsburg
Newcomb, Charles J.	Milwaukee
Newman, Carl R.	Tomahawk
Paquette, Louis J.	Milwaukee
Parke, George Jr.	Richland Center
Pawsat, Ewald H.	Fond du Lac
Peckham, Ben M.	Milwaukee
Quincannon, Francis J.	Lake Geneva
Rauen, Leonard M.	Kenosha
Rikkers, Donald F.	Augusta
Ruehlman, David D.	Monroe
Schelble, John P.	Milwaukee
Scheyer, Carl J.	Puyallup
Schnoebelen, Rene E.	Muscuda
Schoenkerman, Bert B.	Milwaukee
Schulte, George C.	Kenosha
Sherman, Lloyd F.	Siren
Thompson, Richard D.	Milwaukee
Vander Kamp, Harry	Baraboo
Werner, David J.	Milwaukee
Werra, Bernard J.	Wauwatosa
Worm, George J.	Wauwatosa

ORGANIZATION SECTION

THE WAGNER-MURRAY-DINGELL BILL

Hearings on S. 1606—To Provide for a National Health Program

(Note.—*This is a condensation of the verbatim report of the hearings.*—Ed.)

(Continued from page 1179)

United States Senate, Committee on Education and Labor.
April 5, 1946

Honorable James E. Murray Presiding

Present: Senators Murray, Ellender, Aiken and Donnell.

Statements of William Logan Martin, Representing the American Bar Association, and Walter M. Bastian, Treasurer of the American Bar Association

Mr. Martin presented the report of his committee on the previous bill, S. 1161. He stated that the approximate membership of the American Bar Association is 35,000, the largest in the history of the association. The report was presented to the American Bar Association by a committtee of which Mr. W. E. Stanley, Kansas, is chairman, and he and Mr. Clement F. Robinson are the other members.

The House of Delegates of the American Bar Association had adopted the report.

Mr. Martin described the constitution of the House of Delegates of the American Bar Association and the study of health insurance made by the committee.

Senator Donnell: Now, you have not examined S. 1606, the pending measure? Mr. Martin: I have, Senator.

Senator Donnell: Would you tell us, please, what your opinion is generally of S. 1606 and the reasons therefor. Mr. Martin: I think it is more extensive than S. 1161. The substantial differences which I found in comparing the two bills I will indicate in short: The Surgeon General, under the new bill, performs his duties under the supervision of the federal security administrator, whereas formerly he was supreme in the performance of his duties. Second, the Surgeon General may delegate to any federal or state official any of his duties except that of prescribing rules and regulations. He may appoint local area committees selected from panels of names submitted by local individuals or agencies.

The physical foundation is different in the later bill. A sum is appropriated sufficient to defray the expenses of the enterprise, while at the same time there is to be credited to that appropriation 3 per cent of the wages paid and on which, my recollection is, social security taxes are now based. Authority is granted for the appointment of sufficient personnel under Civil Service to carry out the scheme. The Surgeon General is required to make a full report to Congress.

He may make payment by any other method than that agreed on by a majority of the doctors who are on a panel to the doctors who do not elect the method adopted by the majority. Payments are to be adequate, based on customary annual income of the doctors employed. The Surgeon General is to exercise no supervision or control over participating hospitals, and no agreement entered into by participating hospitals with the Surgeon General shall prescribe its administration, personnel or operation.

The scheme is more extensive in that it includes dental and nursing benefits, whereas these were not included in the former bill.

The definition of wages is somewhat different in that it apparently adopts the plan, or, I will leave out "apparently," it does adopt a plan by which it lists the wages on which the tax is to be imposed, excluding a number of classes of wage earners, whereas heretofore it simply referred to a certain section of the Social Security Act which contained the listing of deductions or exemptions from the tax.

Senator Donnell: Now, Mr. Martin, would you be kind enough to state as to the fundamental principles which you find embodied in S. 1606 whether or not your observations would differ materially from those set forth in the conclusions with respect to S. 1161 contained in the report which has already been presented by you this morning. Mr. Martin: My view would not differ at all.

Senator Donnell: And were you to have before you personally S. 1606 at this time just as you had, as a member of the committee, S. 1161 in 1943 and 1944, what would be your net conclusion and advice to our committee as to your opinion respecting S. 1606, whether it is wise or unwise legislation, and the reason for your conclusion? Mr. Martin: Well, I think the judgment of the Bar Association would be the same.

Senator Donnell: What is your own personal conclusion, if you do not mind telling it to us, Mr. Martin? Mr. Martin: My personal conclusion, Senator, is that it is probably the most extensive undertaking made by Congress beyond the limits of the Constitution of this country. I cannot conceive that a bill which goes so far as this into the intimate details of the lives of American citizens can be justified under the Constitution of the United States.

Senator Donnell: Do you mind telling us, briefly, those principles or express provisions of the Constitution to which you refer? Mr. Martin: The Tenth Amendment particularly.

Senator Donnell: Which reserves to the states and to the people the powers not expressly or impliedly conveyed to the federal government? Mr. Martin: That is correct. If a state government, for instance, wanted to adopt a scheme of this kind, it has a perfect right to do so, and the people have a right to do so in the states; but, as I see the government of this country, it never would have been formed if the founders had ever had the faintest idea that Congress would ever undertake such an enterprise as this.

Senator Donnell: Mr. Martin, is there anything further that you would desire to state on the general question that I have asked you? Mr. Martin: Well, in studying this matter the last few days, since I was notified I would be selected to appear here, there came to my mind a paragraph in Washington's farewell address, and I was impressed that it applied to the situation today, and it was just as apt today as it was when he delivered it 140 years ago, and I would like to put that in the record.

Senator Donnell: We would be glad to have you do so. Mr. Martin: He said:

"Toward the preservation of your government and the permanence of your present happy state, it is requisite, not only that you steadily discountenance irregular oppositions to its acknowledged authority, but also that you resist with care the spirit of innovation upon its principles, however specious the pretexts. One method of assault may be to effect, in the forms of the Constitution, alterations which will impair the energy of the system and thus to undermine what cannot be directly overthrown. In all the changes to which you may be invited, remember that time and habit are at least as necessary to fix the true character of governments, as of other human institutions—that experience is the surest standard by which to test the real tendency of the existing constitution of a country—that facility in changes upon the credit of mere hypothesis and opinion exposes to perpetual change, from the endless variety of hypothesis and opinion. . . ."

Now, I do not think any one has ever questioned Washington's leadership, patriotism, wisdom, courage and love of country, and that is a very impressive thing to me.

Now, for the last decade in this country we have seen irregular oppositions to the acknowledged authority of the government, the Constitution has been said to be outmoded, and we need a new government, but the Constitution provides its method of amendment. There has grown up a spirit of innovation on the principles of the Constitution, on many specious pretexts. Here, by Senate bill 1606, the federal government proposes to take over the mental and physical necessities of all the people and interpose its activity between the intimate relationship of the doctor and the patient, all in direct conflict with the Tenth Amendment to the Constitution, which reserves to the states and to the people thereof all power and authority not expressly or impliedly delegated to Congress. Thus, Congress would undermine what could not be directly overthrown. We had thought that time and habit and experience had fixed the true character of our government, but here an extraordinary change in our governmental structure is proposed, based on hypothesis and opinion. The hypothesis is that a certain sector of the people do not receive sufficient medical care, and it is the opinion of the proponents of Senate 1606 that Congress can remedy the situation by setting up a gigantic scheme under the control of one man, by which the government would take over all medical care, supervising doctors, dentists, nurses and hospitals. Such an undertaking on such a basis, to quote Washington's phrase "exposes to perpetual change, from the endless variety of hypothesis and opinion."

(Mr. Martin stated his career in law and in the American Bar Association.)

Mr. Bastian: The judge neglected to say that he had been a member of the board of governors since 1943, and with all of his modesty I will say that he is one of the most distinguished lawyers in the state of Alabama and is so regarded.

Senator Donnell: May I have Mr. Bastian identify himself? Mr. Bastian: I am the treasurer of the American Bar Association and a member of the board of governors, Walter M. Bastian, National Press Building, Washington, D.C.

(Mr. Martin stated his career in law and in the American Bar Association.)

Senator Murray: The American Bar Association is also recognized in the country as a very conservative organization? Mr. Martin: I could not say that. I think the American Bar Association, if you divide bodies of lawyers into two sectors and if you call the Lawyers Guild the radical element, then the American Bar is its conservative element.

(Senator Murray cross questioned Mr. Martin, endeavoring to prove the conservative character of the American Bar Association.)

(Senator Donnell pointed out that officers of the Lawyers' Guild were also chiefly city lawyers.)

Senator Murray: You are familiar with the Blue Cross plans? Mr. Martin: To some extent. For a maximum payment of $49 a year, any size family from two to twenty can get the medical service it needs, that is $4 a month.

Senator Murray: Have you made any study of the problem of these families with an income of from $2,000 to $3,000 a year, with regard to their need of borrowing funds for the purpose and starting themselves in a downward spiral as a result of the indebtedness that they have taken on, frequently to pay medical care expenses? Mr. Martin: I have made no such study, Mr. Chairman, but it would not be a great problem to borrow $49 a year.

Senator Donnell: Mr. Martin, pardon me, what did you mean by the statement that you had not made a careful study of the Blue Cross? Mr. Martin: Well, I have not examined the details of every Blue Cross system in the United States. I do not know how many each covers, and I do not know the cost of each, but I know in a general way the number covered by the plans.

Senator Donnell: What affirmative study have you made of the Blue Cross, so that we may know as to the extent of the coverage?

Mr. Martin: Well, in the preparation of this report I secured a great deal of literature, from different sources, and I analyzed it and digested it into a brief here of some twenty-seven pages. I studied the literature of countries with some kind of health insurance, the plan of the dominion of Canada, the system in Germany, in England, in Russia and in Europe, and I studied the expenditures in the United States for medical services, the progress of medicine in the United States compared with that of European countries, the hospitals in the United States, medical services in the United States, hospital insurance, Blue Cross hospital plans, health insurance, nonprofit and governmental hospitals, voluntary hospitals, indigent care and the cost thereof, and relationship between doctor and patient. There is an index of the subjects which I compiled from my study of the literature on the subject.

Senator Donnell: I gather that you have made some study although you do not mean to state that it is an exhaustive complete study of the Blue Cross. Is that correct? Mr. Martin: That is correct. I had overlooked for the moment this study made two years ago or three years ago.

Senator Donnell: And in your response to Chairman Murray in which you stated that you had not made a careful study, do you mean to say that you made a study that was lacking in care or that you simply had not made a comprehensive and complete study? Mr. Martin: I have not made an exhaustive study.

Senator Donnell: Now in regard to the exact figures, for instance the 40,000,000 figure that I think you mentioned, are you undertaking to state with accuracy the figures or are you giving your best recollection? Mr. Martin: I had better break that figure down. There are 40,000,000 people in this country covered by the Blue Cross plans and the plans which are fostered by insurance companies. Such is my information.

Senator Donnell: You are using the Blue Cross as a generic term for voluntary insurance? Mr. Martin: Where premiums are paid for the service.

Senator Donnell: You are not confining the use of the Blue Cross to some organization that calls itself the Blue Cross? Mr. Martin: No. I think there are 21,000,000 today under the Blue Cross plans and that number is increasing at the rate of 5,000,000 a year.

Senator Donnell: As to the coverage, is it not true that ordinarily the Blue Cross does cover only bed and board in the hospital and not surgeon's fees, or do you know?

Mr. Martin: I think that was the case originally, but it is greatly extended now, as in my own state, which I referred to, where it now covers medical service.

Senator Donnell: Now, in view of the courtesy of Mr. Bastian in coming, if I might ask him to tell us why Mr. Martin is here this morning and what if anything occurred in the way of polling the board of governors of the American Bar Association.

Mr. Bastian: We received an invitation from the distinguished chairman of this committee to be present, so our appearance is not a voluntary one but is a result of an invitation very generously extended. The president of our Association and the chairman of the house of delegates, Mr. Willis Smith of North Carolina, is president and Mr. Gregory of Illinois is chairman of the house of delegates—are now at Nuremburg at the invitation of the War Department observing the war crime trials. The administrative committee of the American Bar Association met in Chicago the early part of March, and that committee consisted of the president and the chairman of the house, who are absent, the secretary, the chairman of the budget committee, who comes from the same state as our distinguished chairman, and the chairman of the committee on sections, who comes from Delaware, and myself, so that we had four out of the six members present.

We examined the invitation of the chairman of the committee and polled the board as to whether or not we would designate Mr. Martin to be present, because of the study which he had made, to speak on the former proposed legislation. The Bar Association had not passed on S. 1606, but we thought it would be of interest to the committee to hear our views on the previous bill, and hence the presence of Mr. Martin today.

I might say that the polls were unanimous in the authorization of Mr. Martin.

Senator Murray: I was going to ask Mr. Martin if he had made any study of the reports of the Selective Service Administration in connection with the examination of the young men of this country during the recent war. Mr. Martin: No, I have not.

Senator Murray: And you are not familiar with the fact that there had been a very large percentage of American youth rejected as defective due to the fact that their health had been neglected? Mr. Martin: From general reading, yes, I was aware of that fact.

Senator Murray: And you know that that situation prevails in the country quite generally, that there are a great many people who because of their failure to get adequate medical care in time, have greatly impaired their health? Mr. Martin: I suppose so. My eyes are bad, and I perhaps did not have the care in my youth that I should have had, but I cannot have perfect eyes, and everybody cannot have perfect eyes, and everybody cannot have perfect health unless we are all going to be perfect. We are human beings.

Senator Murray: But the health of the American people would be greatly improved if there was some way in which they could have ready access to modern medical advice and care? Mr. Martin: I should think so.

Senator Murray: It would greatly benefit American industry and American business too, would it not, if we had a system of health care in this country where people would not hesitate to go and consult their physicians and take care of their health in time before their health became seriously impaired? Mr. Martin: I think that we should have a real elysium if there were no ills at all. We would have a wonderful country if nobody ever got sick or nobody had an ailment.

Senator Murray: Do you think that that is the aim of this bill, to have nobody ever get sick? Mr. Martin: No, I do not think so. I do not think that that is possible.

Senator Murray: Of course not. Why would you make that observation then? I do not think that that is called for in an answer to my question. It does not seem to me that anybody would ever expect to have any such a situation as that kind, but there could be a great improvement in the national health if we had some system whereby people would not hesitate, and where they would not feel as a result of the cost of medical care that they would not be able to go and get it at the proper time. Mr. Martin: Yes, and with an expenditure of four and a half billions of dollars, or three billions of dollars, or whatever it is, of course there is bound to be a favorable result from it.

Senator Donnell: You mentioned or the chairman mentioned governmental participation. As I understood it you were pointing out that as between the state governments and the federal government you do not believe that this health insurance plan is a function of the federal government, that if the government is to intervene in the matter it is a problem and function of state governments as distinguished from the federal government? Mr. Martin: Under our present form of government, that is correct.

Statement of Leo J. Linder, National Lawyers Guild

Mr. Linder, said that he is a lawyer admitted to practice in New York.

Mr. Linder: The report of the National Committee adopted by the National Lawyers' Guild strongly supports the National Health Act and regards the National Health Act as legislation of paramount importance and benefit to the American people.

We believe that the existing arrangements for providing medical care accordingly need much improvement, and we are satisfied that the insurance principle of pooling costs and risks so that persons can be paid out of a common fund when and where and as often as they need care should be applied.

We believe that the difficulty with voluntary private insurance is that it involves a small pool restricted to a limited group, and we observe that the necessity of protecting the solvency of the fund results in a limitation of protection of private voluntary plans to certain specified medical services and also to large cost.

We thus conclude that voluntary private insurance is too restrictive in benefits and too high in cost to be serviceable for more than a small minority of the American people.

We believe that social insurance, which involves distributing the risks over virtually the entire nation, is clearly the cheapest and most effective means of dealing with the problem; and we believe that national social insurance and a national health fund is enormously preferable to any statewide compulsory social insurance system.

Senator Ellender: How much smaller is the per capita cost under the pending measure than it is under the system of voluntary insurance? Mr. Linder: Much smaller, Senator.

Senator Ellender: I would like to know Why is that? I understand that these plans are voluntary and on a nonprofit basis. Mr. Linder: That is correct. The difficulty is that in order to protect the solvency of the fund the private insurance societies are necessarily restricted in scope. I am a member of the Blue Cross system in New York City and I pay $24 a year, but the only service I get under that Blue Cross policy that I have is a limited hospital service. I get no medical care at all for myself and for the members of my family.

Senator Ellender: Could you get more if you paid more? Mr. Linder: There are other systems. I also have a health and accident insurance policy which costs me $60 a year and gives me very limited coverage after a thirty day waiting period and for a limited period. I also pay—27 times 4—a little over $100 a year to another health and accident insurance company that provides also very inadequate and limited coverage.

I can say without qualification at all that the benefits which would be provided under the Wagner-Murray-Dingell bill would be enormously greater than the benefits I get under all three systems of private protection which I have personally resorted to as a means of protecting myself and my family.

Senator Ellender: Do not some of those policies you have now protect you not only for medical care but give you a weekly or monthly stipend? Mr. Linder: That is correct.

Senator Ellender: Is it your view that this Blue Cross is limited to such an extent that it could not provide the necessary care for sick people? Mr. Linder: I have not the slightest doubt that Blue Cross could not, without going bankrupt, provide the medical care that is provided in the Wagner-Murray-Dingell bill unless the premiums were three to four times the present premiums.

I should like to say, Senator, that this part of my discussion is a discussion in which I think I am less expert than the portion of my testimony that I would like to now go into, which deals with legal matters. I can speak of my own personal knowledge with respect to personal experience with respect to Blue Cross, but I think your committee would be better served if you let experts in the field of public health and experts who have examined the data with respect to that talk to you.

With respect to the matter of constitutionality, I notice that the report of the American Bar Association presented here this morning contains one sentence on constitutionality. It states "S. 1161 is utterly beyond the powers of Congress." I would like to submit, gentlemen, that the matter of constitutionality of this legislation is decisively determined by the decisions of the United States Supreme Court dealing with the social security cases. I note that in one of them, Steward Machine Company against Davis, 301 U. S. 548, Mr. William Logan Martin, who appeared here this morning, was counsel for petitioner asserting the unconstitutionality of the unemployment compensation provisions of the Social Security Act; and while he is unquestionably entitled to his personal opinion, the United States Supreme Court did not adopt that opinion, and so he is still averring unconstitutionality in the face of the authority determination of our highest court.

Senator Donnell: Mr. Chairman, I submit that the highest court of our land did not have this bill before it. The matters before it were social security legislation now on the books.

Mr. Linder: Our analysis of the American Bar Association report leads us to the conclusion that that report, I regret to say, contains many errors of fact, many serious errors of interpretation, and abounds in conclusions which are unwarranted and totally unjustified.

(Mr. Linder made an extensive answer to the criticisms of the American Bar Association and insisted the bill grants free choice of physician.)

Senator Donnell: For instance, if you do not mind my interruption, in subdivision (j), section 205, it is prescribed that the Surgeon General may prescribe maximum limits and the number of potential beneficiaries for whom a practitioner may undertake to furnish general medical or general dental benefits. Mr. Linder: Yes.

Senator Donnell: For instance, if the Surgeon General stated, say, that Dr. Jones in Sedalia, Mo., is limited to 50 potential beneficiaries that he may treat, and I happen to live there, and I am number 51, and I want Dr. Jones, who is my old family physician; but since I am number 51 I cannot get him under that section of the bill. Am I correct on that or not? Mr. Linder: Senator, your assumption is an assumption which I cannot entertain. It is an assumption of so unreasonable a regulation that it would be nugatory and ineffective.

Senator Donnell: You mean that 50 may be too low? Mr. Linder: It may be too low.

Senator Donnell: Suppose it is 250 and I am number 251; I cannot get the services of Dr. Jones if I happen to be the one next man beyond the 250. Am I correct, or am I not? Mr. Linder: I must make an answer in two sections. Senator Donnell: Could you make it "yes" or "no" first? Mr. Linder: I do not think a "yes" or "no" answer would intelligently give you the information you desire.

Senator Donnell: Very well. Mr. Linder: First, (j) only applies to the per capita compensation. It has no application where a per capita arrangement has not been adopted by the doctors. That is the first point that you must understand.

Now, if the majority of the doctors in Sedalia, Mo., decide that they do not want to be paid on a fee basis, that they do not want to be paid on a salary basis, that they want to be paid on a per capita basis; that is to say, that they want to be paid according to the number of patients they serve, and assuming that they have done so; and assuming, second, that there are 500 people in Sedalia, and that with 500 people to be served and with a limited number of doctors to serve them, and with the doctors having agreed on by majority vote a per capita basis, then if a regulation is imposed the regulation would have to be reasonable, and if it was not reasonable the doctors or the patients could take it up on review; and if it were reasonable, Senator, where no doctor would take you, and you had been refused by every doctor, then it might be that a reasonable regulation might require you to be assigned to a doctor regardless of your preference or the doctor's preference; but you would have to get that extraordinarily remote situation. That situation would have to apply only in such an unusual case as that before you could have any possible dissatisfaction.

The scheme of this bill, as set forth in the sections which I have read, is that all the doctors in Sedalia, Mo., have a right to treat patients within the system if they want to. If they do not want to they are not compelled to do so. If they prefer to treat only the wealthier people in the community who can pay them more substantial fees commensurate with what they regard to be the value of their services, they need not serve the people taken care of here. That is number one.

Number two, every person in Sedalia, Mo., who is covered has a choice of going to any doctor on the list, and every doctor who wants to be and is qualified under the laws of the state of Missouri is entitled to be on the list.

How is the doctor to be paid? The doctor is to be paid according to the vote of the majority of the doctors in Sedalia. The majority can decide whether they want to be paid according to a fee schedule. They can decide that they want to be paid on a salary basis. They can decide that they want to be paid on a per capita basis. They can decide that they want to be paid on a combination of these.

It seems to me that our belief in democracy ought to extend to our belief in applying democratic principles to the doctors as well. If the doctors understand that the people in Sedalia, Mo., cannot get adequate medical care unless the costs of medical care are insured, then it would seem to me again that the doctors in Sedalia, Mo., ought to recommend this arrangement, because here for the first time the patients are sure of service and here for the first time he is sure of his fee.

Now, the only difference in the relationship between the doctor and the patient provided here is that the doctor, instead of saying to his patient after he has finished his ministrations "My fee is so many dollars," the doctor says "I have noted the service given." And he then is paid by the government.

Now, if I should break a leg and under my policy after my doctor has treated me I should ask my doctor to send his bill to the insurance company, I would not think he was being socialized, and most doctors would be entirely satisfied too.

All that this bill does is that it insures everybody in the way that I am now insured when I personally buy private insurance, which I can afford to buy, but which many people cannot.

What is involved here is essentially an extension of the principles of workmen's compensation. It would be preposterous to suggest that workmen's compensation is socialized medicine or involves bureaucratic interference with the rights and privileges of free men, because we all understand that workmen's compensation creates a situation that when a worker is injured he gets the attention he needs.

Senator Ellender: I tried to develop this situation with Mr. Altmeyer yesterday, and if I understood him well he agrees with the American Bar Association that there is not complete freedom of choice of doctors by patients as quoted here by you on page 14 and attributed to Senator Wagner for the simple reason that in order for me to be able to get my family physician my family physician must be a part of this whole scheme. Mr. Linder: Not at all. Senator Ellender: Yes, he must. Mr. Linder: Senator—

Senator Ellender: Wait a minute, now. On page 46 of the bill it is stated in this subdivision (e) of section 205. Mr. Linder: I have it.

Senator Ellender: "The Surgeon General shall publish and otherwise make known in each local area to individuals entitled to benefit under this title the names of medical and dental practitioners and groups of practitioners who have agreed to furnish services as benefits under this title and to make such lists of names readily available to individuals entitled to benefits under this title."

Now, if in my community you have 25 doctors and only 10 comply with this section, what would happen? Mr. Linder: Only 10 legally qualified?

Senator Ellender: No, not legally qualified. I am assuming that the 25 are qualified. Mr. Linder: But only 10 have agreed to serve?

Senator Ellender: Yes, only 10 have agreed to comply with subsection (e). These 10 would be put on that list and the rest of them in the amount of 15 would be left out. If my family physician is among that 15 then I cannot call him? Mr. Linder: Sure you can.

Senator Ellender: Unless I pay for it? Mr. Linder: That is right.

Senator Donnell: In addition to the fact that he would have been charged the other taxation on the plan.

Mr. Linder: What about a public school system? If you do not want to send your child to a public school you do not have to, but you have to pay for it. Senator Ellender: I understand.

Mr. Linder: That is the same point. Senator Ellender: No, it is not, because you say that the American Bar Association is wrong in its conclusion. I say that you are wrong.

Senator Donnell: Mr. Chairman, without any criticism of Mr. Linder, because I can see his concern and his interest in this matter and his desire to elucidate his theories, the question I asked him could be answered "yes" or "no" with an explanation; and I dare say that if Mr. Linder had a witness on the stand and he asked him that question he would insist on the question being answered "yes" or "no." Mr. Linder: What is the question?

Senator Donnell: The question, as nearly as I recall, if I live in Sedalia, Mo., which I do not, but if I live in Sedalia, Mo.—and here I am going to change that so as to get the name of my home town in. If I live in Webster Groves, Mo., which is one of the charming and delightful suburbs of the city of St. Louis, if I live there and my doctor is Dr. Jones, under the present situation I have a right to request him to serve me, and if he is willing he has no restrictions in so doing. Is that correct? Mr. Linder: Right.

Senator Donnell: Under the provisions of this subsection of section 205, S. 1606, as I understand it, and I am quoting, "The Surgeon General may prescribe maximum limits to the number of potential beneficiaries for whom a practitioner or group of practitioners may undertake to furnish general medical or general dental benefit." That is correct, is it not? Mr. Linder: That is right.

Senator Donnell: We will assume, therefore, that the Surgeon General says that in Webster Groves, Mo., no doctor may take more than 250 patients. Mr. Linder: You are assuming now that the doctors have agreed on the per capita basis.

Senator Donnell: And after they have assumed it they have therefore come under the operation of the bill, which they can do or not do. Am I right? Mr. Linder: That is right.

Senator Donnell: Say they do in Webster Groves, Mo., because of what was pointed out here yesterday, the fact that this may increase their income, which is entirely proper for them to take into their minds, they do agree on accepting the terms of the bill; and there is a limitation placed so that Dr. Jones may take only 250 patients. My question, as nearly as I can recall it, was, asuming all these facts, that in the city of Webster Groves the doctors by majority vote have decided Dr. Jones can have only 250 patients, and that majority vote is taken as part of the system of S. 1606, and Dr. Jones, who is my close and intimate friend and personal physician, finds himself limited to 250 patients; and I walk into his office with a high fever. I am therefore number 251. Mr. Linder: Why are you 251? Why are you not in the 250?

Senator Donnell: The 250 have been there before me. Mr. Linder: I see.

Senator Donnell: There are 250 on the list before me, and I walk in as 251. Dr. Jones cannot, as I read this section, treat me regardless of the extremity under which I may be. Mr. Linder: I think that is a normal procedure.

Senator Donnell: The question is, am I correct or not correct in my understanding? I think that the witness can answer that "yes" or "no." Mr. Linder: The answer is "yes."

Senator Donnell: I am correct. Mr. Linder: Yes.

Senator Donnell: What is your explanation? Mr. Linder: I say the answer is "yes"; and I do not think that is any more terrible than if you went to your doctor and he was busy delivering a baby and he said "I cannot take care of you; I am busy." The point is that common sense imposes reasonable restrictions. If it were reasonable that in Webster Groves there should only be 250 patients for one doctor, and if you had not diligently notified the doctor that you wanted to be one of his 250, that, as I understand it, is your misfortune, just one of the trifling incidents of operating a system of medical care. The thing I want to make clear, Senator, is that you must never forget subdivision (g) of section 203 of the act.

Senator Donnell: Now, Mr. Chairman, it would be a little difficult for me to be carrying around this act with me all the time. Mr. Linder: You have to pass on it.

Senator Donnell: Mr. Chairman, I doubt very much if I could prevent my fever from rising to a very high point if I did. Mr. Linder: Now, subdivision (g) of section 203—"The Surgeon General, after consultation with the board, and after consultation with the advisory council as to questions of general policy and administration, and with the approval of the federal security administrator, shall prescribe and publish such rules and regulations and require such records and reports, not inconsistent with other provisions of this act, as may be necessary to the efficient administration of this title."
And then there is a proviso that is not pertinent to what I am going to say.

The sense of that section is that all regulations must be reasonable. All regulations must be designed within the spirit of the act. All regulations must be designed to carry into effect subdivision (f) of section 205, which says that the methods of administration shall insure the prompt and efficient care of individuals entitled to personal health service benefits, promote personal relationships between physician and patient, provide professional and financial incentives for the professional advancement of practitioners, and so on. The point is that you must not assume an unreasonable regulation and then beat this legislation with the stick of that unreasonable assumption.

Senator Donnell: In the first place, I do not think the regulation I assumed was unreasonable within the four corners of this bill. You have to have some figure provided under subdivision (j) of section 205. I have selected a figure. Mr. Linder: Which is unreasonable.

Senator Donnell: If you think it is, tell me why it is. Senator Murray: Assuming that it is reasonable, would there be anything unreasonable in the Surgeon General's permitting him to take 1 more patient? Would that not be a reasonable thing to assume, if he insisted on having that doctor, that the Surgeon General would say "All right; you may have that doctor." Mr. Linder: Of course.

Senator Donnell: So far as I have observed the bill does not say that. Senator Murray: I know.

Senator Donnell: I do not want to have a prolonged argument, because we will have to settle all these things, but I would like to get Mr. Linder's ideas. This says that the Surgeon General may prescribe these maximum limits of potential beneficiaries, which is the maximum number of patients, which maximum limits may be nationally uniform or may be adapted to take account of relevant factors. Mr. Linder: That is right.

Senator Donnell: The point I am making is that the Surgeon General has a right to make a limit beyond which Dr. Jones, after this majority vote of the doctors in Webster Groves, cannot go. Mr. Linder: May I interrupt a moment?

Senator Donnell: If I may finish, please. Point number two: I realize what Mr. Linder has expressed as regards the reasonableness of regulations, and yet there is not a man, woman or child, if there be any in this room this morning, that has not heard of unreasonable regulations in the administration of bureaucratic affairs in our government. Mr. Linder: That is what the courts are for.

Senator Donnell: I *do not* want to go to court. Mr. Linder: Why not?

Senator Donnell: If I had a fever. Mr. Linder: What would you do if *you* had a fever and could not get a doctor?

Senator Donnell: I want to say two things; first, that to my mind there is an exceedingly *unreasonable policy* in allowing the *majority* of doctors in the city of Webster Groves, Mo., to put it in the *power* of any individual board or combination of boards to say *how many* patients Dr. Jones on Gore Avenue can take; and I say there is strong reason and view that Dr. Jones should not be restricted in determining the persons whom he will serve. Nor *should* the patient, perhaps in extreme cases, like emergencies, be *required* to rely on some regulation in Washington, perhaps even having to go to court to enforce his rights, as Mr. Linder indicates.

Mr. Linder: There *must* be a maximum limitation on the number of patients to be served by doctors, or otherwise you would have a situation where the doctors would be overburdened and the patients could not get decent service.

Senator Donnell: Is there any such limitation now under the law of our country as to the number of patients the doctor may take? Is that not left to the good judgment of the doctor himself? And has not *our spirit of American* enterprise and personal adjustment found it necessary to leave that to Dr. Jones rather than somebody in Washington? Mr. Linder: First of all, the doctors and people in Webster Groves would for all practical purposes determine the situation. There are a whole series of specific provisions providing for local areas and their administration, so the suggestion that this is something that the Surgeon General will be soothing your fevered brow in Webster Groves is fantastic, with all due respect, Senator. Only the doctor in Webster Groves could take care of you. And it makes sense also that in Webster Groves reasonable limitations should be placed on the number of patients any one doctor should take care of. It seems to me, Senator, that you must approach the whole question from this standpoint. I do not know anything about Webster Groves, but assuming that it is a community in which there are poor people and people of small income, the fact is that the majority of the people of small income and medium sized income in the United States are not in a position to meet the costs of medical care when a *catastrophe occurs. The fact is that one third of the people of the country do not get any medical care, if our own government* reports are to be believed.

Senator Donnell: May I ask the witness at that point, Mr. Chairman: you are relying, are you not, Mr. Linder, on a statement printed in *1939* based on studies of the Committee on the Costs of Medical Care made in *1929, 1930* and *1931?* Mr. Linder: Yes.

. . . .

Senator Murray: Is not this right to select somewhat overexaggerated? I know a case from my state of Montana where a member of my family traveled to Baltimore to be operated on by a well known physician. When she got there she found out she could not have his services, was operated on by a total stranger and was entirely satisfied in every respect. I think there is gross exaggeration there. Mr. Linder: I think so too.

Senator Murray: And I think in the Army the boys did not select the surgeons that operated *on them over* in the battlefields, and they were treated pretty well. Mr. Linder: They got better medical care than most of them had got in their lives.

Senator Murray: That is right. They were benefited in health in every way. Mr. Linder: I think the whole subject of free choice of doctors is an exaggerated, hysterical "bugaboo" that has no real relationship to reality. The truth of the matter is that our choice of doctors is restricted. It is restricted by the number of doctors available. It is restricted by the amount of money we have got. It is restricted by the willingness and the ability of the doctors to take us on. It is restricted by many, many different factors.

Senator Donnell: But not by any governmental prohibition against his taking the case! Mr. Linder: So what?

Senator Donnell: There is a very great difference between restriction by governmental *prohibition* against a doctor taking on a case and an economic and *professional* situation which makes it impossible for him to do so. The one point is governmental discipline, direct compulsion, while the other is a situation which arises under the operation of natural forces uninfluenced by governmental regimentation. Mr. Linder: Senator, if you had a violent "bellyache" and you had no doctor except the Public Health surgeon, you would be tickled to death and thank God for the public surgeon.

Senator Donnell: But if, on the other hand, I had a choice between the Public Health surgeon, whom I do not know, and Dr. Jones of Webster Groves, whom I do know, I would want Dr. Jones to treat me. Mr. Linder: And there is nothing in the bill which prohibits Dr. Jones from treating you.

Senator Murray: It seems to me that we are living in a democracy. We are living in a democracy, and if the majority of the people want some sort of national health insurance which will enable them to have access to modern medical care, I think they should be able to have it, regardless of the fact that a few people make carping criticisms and objections. You could oppose every beneficial measure ever enacted by Congress for the welfare of the people if you wanted to be technical. I do not think any law is absolutely perfect or could be justified 100 per cent. It is the general benefit involved. I would like to ask Mr. Watson Miller to make an observation. He has been a witness here.

Mr. Miller: I have been very much interested in this colloquy, and I do not desire to gild the lily or paint the rose. I much appreciate the spirit of democracy, the Senator's good humor and his self control and interest. It seems to me that the 250 people we are talking about could be defined in such a manner as this: that that represents a figure of not necessarily individuals. For instance, I might want a doctor as a surgeon, but not in obstetric work. It could be elastic in that system being discussed here indicated in this colloquy.

Senator Donnell: I would like to thank Mr. Miller for his very kind expression toward me, and I assume toward Mr. Linder also. We realize this is not a personal matter, but one in which we are all concerned.

Mr. Miller: In that expression I did not mean to be trite. It was deeply felt.

Senator Donnell: I appreciate it very much. I am sure it was.

Senator Murray: This is democracy in action here. Senator Donnell: Yes.

(Mr. Linder summarized his analysis of the items which he quoted from the American Bar Association report.)

Mr. Linder: Any physician who does not wish to treat patients under the insurance system may continue his private practice; and private practice may also be combined with practice under the system. This choice remains unimpaired. When an insured person is refused by a physician he has the right to make another choice and, of course, subject to routine regulations, will have the right to change physicians.

Senator Donnell: Who makes those "routine regulations" subject to which he has right to change? Mr. Linder: I should say the local area doctors, subject to the decision of the Surgeon General, and his regulations must be reasonable.

Senator Donnell: But the right to change physicians is, as you say, subject to regulations made by these authorities? Mr. Linder: Of course. Senator, there are people who are crazy who run from one doctor to another. If a patient ran from one doctor to fifteen and you were the Surgeon General and you imposed a regulation that a patient could not see more than twenty doctors for the same ailment within two days, you would not think that was bureaucratic regimentation.

Senator Donnell: May I ask the witness, Mr. Chairman, who does he think is best qualified to determine whether or not a change shall be made, the Surgeon General in Washington or William Smith in Sedalia, Mo.? Mr. Linder: William Smith.

Senator Donnell: William Smith does not think he is crazy. Maybe he is, but he wants to change, but in order to make the change he is subject to routine regulations made by the doctors which must come to Washington for approval, so that the ultimate power is in the Surgeon General here to determine whether William Smith can or cannot go across the street to get another doctor. Mr. Linder: I say that you cannot assume an unreasonable regulation and then beat the act with that. You must assume a reasonable regulation.

(Mr. Linder completed his testimony with a further attack on the American Bar Association report and discussed at length with Senator Donnell the right to go to the courts over differences in the regulations under the proposed act.)

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Senator Donnell: How old an organization is the National Lawyers Guild? Mr. Linder: About ten years.

Senator Donnell: As you doubtless know, the American Bar Association has been in existence since 1878, I believe, having been formed in New York State at Saratoga Springs in or about 1878; do you know that? Mr. Linder: I have no knowledge of that.

Senator Donnell: You do know that the American Bar Association has been in existence for many years preceding the organization of the National Lawyers Guild? Mr. Linder: It has all of the benefits and merits and disadvantages of age.

Senator Donnell: Mr. Linder, the Lawyers Guild has approximately how many members? Mr. Linder: Approximately 3,000.

Senator Donnell: So that it is somewhat less than a tenth of the membership of the American Bar Association as it was mentioned by Mr. Martin this morning? Mr. Linder: I have no knowledge of the membership of the American Bar Association and therefore cannot compare them.

Senator Donnell: Has there been any feeling of hostility on the part of National Lawyers Guild toward the American Bar Association? Mr. Linder: The organizations, as corporate entities, have no hostility to each other whatsoever.

Senator Donnell: As distinguished from corporate entities I am referring now to the actual physical entities; has there not been considerable feeling of hostility on the part of the National Lawyers Guild against the American Bar Association? Mr. Linder: There is a difference of opinon between them on some subjects but not on all subjects. I should think that on many subjects dealing with technical matters of jurisprudence the American Bar Association and the National Lawyers Guild may very well see eye to eye.

Senator Donnell: Mr. Linder, in a very recent issue of *PM* there appears an article, very interesting indeed, in regard to Mr. Robert Walker Kenny. He is the gentleman who is the president of the National Lawyers Guild, is he not? Mr. Linder: Yes, sir.

Senator Donnell: In the course of this article appears this statement to which I call your attention: "Kenny's story of his handling of the Lawyers Guild storm went like this: 'The boys just made the mistake of allowing a few scrappy individuals to sidetrack them into debating their individual political philosophies. I had been one of the founding fathers of the organization. It seemed worth sticking through a little trouble. We were to the American Bar Association as the C. I. O. is to the American Federation of Labor. The American Bar Association, which pretended to speak for the lawyers of the country, was supporting the Liberty League trying to bust the Roosevelt social program, butcher the Child Labor Law. It was a moribund, decadent outfit. I believe in keeping alive in your times.'" Does that express the general feeling, so far as you have observed, of the officials of the Lawyers Guild with respect to the American Bar Association? Mr. Linder: I should not be able to characterize the general feeling of any large body of men who differ in their views, but without desiring to avoid your question at all I should say that I personally have very strong views with respect to it and I will be very glad to state my own views.

Senator Donnell: Would you state them? Mr. Linder: Surely. I believe that the American Bar Association is dominated by lawyers who represent large corporate interests in this country and who reflect the views of the largest corporate interests in our country. As far as there are reactionary, antiprogressive elements in industry, I think that the American Bar Association is dominated by lawyers who express that point of view. I think that it is not accidental at all that the American Bar Association should echo so completely the views of the organized hierarchy that dominates American medicine in the American Medical Association, and I think it is no accident at all that the Lawyers Guild should emerge as the champion of the people's rights and needs in opposition to the American Bar Association.

Senator Donnell: Now, Mr. Linder, I observe in what I read, as quoted from Mr. Kenny, the statement referring to the American Bar Association, that it was a moribund, decadent outfit. I have had the word "moribund" looked up in the dictionary and I find it means "on the point of dying." Do you concur in that view with respect to the American Bar Association? Mr. Linder: I have no knowledge of whether it is dying or is not dying. I have only a knowledge as to whether it should die.

Senator Donnell: And you think it should; is that right? Mr. Linder: No.

Senator Donnell: What did you mean by that statement? Mr. Linder: My view is that American Bar Association is dominated by reactionary men and that—

Senator Donnell: What did you mean about whether it should die? Mr. Linder: As an organization dominated, it seems to me that it ill serves the welfare of our country.

Senator Donnell: Therefore, if it ill serves the welfare of our American country, it ought to die, is that your view? Mr. Linder: That is right.

Senator Donnell: As regards whether it is dying, however, I recall to your memory the testimony of Mr. Martin this morning that the membership is 35,000, which he stated is the largest in the history of the organization. I refer also to this quotation from page 141 of the proceedings of the American Bar Association, volume 69, 1944:

"President Henderson," who, I may say, is president Joseph Henderson, a well known lawyer of Philadelphia, continuing the quotation—"in his statement to the house first expressed his appreciation to the staff and the official family as well as the general membership of the association for their cooperation.

He reported that the membership as of September 1 was approximately 32,564, which exceeds by 1,000 the highest previous total, which occurred in 1939."

You would not consider, in fact, regardless of your own views as to the merits of the American Bar Association, that in view of these figures and the further increase from the 32,564 mentioned by President Henderson in 1944, up to 35,000 testified to by Mr. Martin, you would not consider that in fact that the American Bar Association, to adopt the language assigned to Mr. Kenny, is a moribund organization, to wit, on the point of dying, would you? MR. LINDER: Well, an organization may be moribund and have all of the trappings and all of the outward appearances of great life. There is more than one person who has a cancer that will kill him who is walking around with all of the appearances of good health.

SENATOR DONNELL: The National Lawyers Guild, which, I take it, has the views pretty largely as expressed by you in regard to the American Bar Association, has been formed within the last ten years and contains about 3,000 lawyers. Those are facts, are they not? MR. LINDER: Well, some of them. You have put a number of things together in one question. Some of them I know something about. Some of them I do not. I do not know anything about the membership of the American Bar Association, and I do not presume to speak for what the whole membership of the National Lawyers Guild believe.

SENATOR DONNELL: You are here on behalf of the Lawyers Guild? MR. LINDER: I am here on behalf of the National Lawyers Guild.

SENATOR DONNELL: In connection with the bill? MR. LINDER: To present a report. The report I presented has been carefully studied by a committee and then reviewed carefully by a national body.

SENATOR DONNELL: Now, you said, Mr. Linder, this morning, as I recall, that approximately one third of the population receives no medical care, is that correct? MR. LINDER: I said that there is a government publication which says so.

SENATOR DONNELL: What is that government publication? MR. LINDER: I gave that to you this morning.

SENATOR DONNELL: I want to be sure that I exactly know what that is. MR. LINDER: I will be glad to give it to you again. "The Report of the Technical Committee on Medical Care," transmitted to Congress by the President on Jan. 23, 1939, House of Representatives document 120.

SENATOR DONNELL: Was that based on studies of the Committee on the Costs of Medical Care made in 1929, 1930 and 1931, and on the national health survey made in 1935? MR. LINDER: I believe so, but I have not got the document before me and I do not really recall.

SENATOR DONNELL: Now, Mr. Linder, you referred to the constitutionality of this bill, and you mentioned particularly the Helvering versus Davis case, and the Stewart case, both appearing in 301 U. S. Supreme Court, and both referring to the Social Security legislation? MR. LINDER: Right.

SENATOR DONNELL: Would you state, please, whether or not it is, in your opinion, a correct statement of law that the federal government possesses only those powers which are either expressly or by necessary implication conferred on it by the Constitution of the United States? MR. LINDER: That is correct.

SENATOR DONNELL: Will you tell us, please, what provision or provisions of the Constitution of the United States, in your opinion, authorize and confer on the Congress the power to enact legislation providing for compulsory health insurance? MR. LINDER: Section 8 of article I.

SENATOR DONNELL: Is that the "general welfare" clause? MR. LINDER: That is right.

SENATOR DONNELL: Is there any other section that authorizes it? MR. LINDER: That is enough.

SENATOR DONNELL: Is that the only one? MR. LINDER: I am not prepared to say whether it is the only one. I think it is sufficient.

SENATOR DONNELL: It is the only one to which your mind now reverts? MR. LINDER: That is correct.

SENATOR DONNELL: And that section reads: "1. The Congress shall have power: "To lay and collect taxes, duties, imposts and excises, to pay the debts and provide for the common defense and general welfare of the United States; but all duties, imposts and excises shall be uniform throughout the United States." Is that correct? MR. LINDER: Yes, sir.

SENATOR DONNELL: There is also mention of general welfare in the Preamble to the Constitution of the United States; is there not? MR. LINDER: Yes, sir.

SENATOR DONNELL: Namely, that "We, the people of the United States, in order to form a more perfect Union, establish justice, insure domestic tranquillity, provide for the common defense, promote the general welfare and secure the blessings of liberty to ourselves and our posterity, do ordain and establish this Constitution for the United States of America." That is correct, is it not? MR. LINDER: Correct.

SENATOR DONNELL: Now, the language "promote the general welfare" in the preamble has, however, has it not, been expressly held by the Supreme Court of the United States not to confer any legislative power whatsoever; we agree on that as lawyers, do we not? MR. LINDER: No, no. The general welfare clause expressly—

SENATOR DONNELL: I am talking about the preamble, only the Preamble. The mention of the general promotion of general welfare, has it not been held by the Supreme Court, expressly in at least 1, possibly 2 cases—MR. LINDER: I believe so.

SENATOR DONNELL: —that no legislative power is conferred by the Preamble? MR. LINDER: I believe so.

SENATOR DONNELL: I believe that is correct. As to section 8 of article I of the Constitution, namely the so-called "general welfare clause," which starts as I have indicated, with the language "To lay and collect taxes, duties, imposts and excises to pay the debts," and so forth, I will ask you to state, please, whether or not you have observed that the Supreme Court of the United States has held expressly that said clause does not grant two powers; namely, the power on the one hand to lay and collect taxes, duties, imposts and excises and, on the other hand, to provide for the general welfare of the United States, has it not been held by the Supreme Court in express language almost what I am going to say, that the power conferred by this section of article I is merely a power to lay and collect taxes, duties, imposts and excises, and that the mention of the general welfare is a definition of the purpose? MR. LINDER: Is a qualification of the other.

SENATOR DONNELL: That is correct. It is a definition of the purposes for which taxes, duties, imposts and excises may be made, that is correct? MR. LINDER: It is so broad a qualification I could not really regard it as a qualification. It is the objective. I think it is correct to say that the language states the objective to be accomplished by the laying of the imposts, et cetera.

SENATOR DONNELL: In other words, the point I am making is that the Supreme Court has indicated very clearly, has it not, that there is no general power conferred by the Constitution of the United States by section 8 of article I to provide for the general welfare except so far as that provision is based under the power and dependent on the power to lay and collect taxes, duties, imports, et cetera; that is correct, is it not? MR. LINDER: I believe so.

SENATOR DONNELL: In other words, has not the Supreme Court of the United States held, in substance, that the power that is conferred is one to lay and collect taxes, and so forth, and that there is no separate second power granted by this section to provide for the general welfare? MR. LINDER: That is correct, but you must bear in mind that Mr. Justice Cardoza uses this language on page 640 of the Helvering decision: "Congress may spend money in aid of the general welfare," Constitution, article I, section 8. And I think that I cannot cite any greater authority for what the Constitution provides Congress may do than that sentence, so that the Supreme Court often has said that Congress may spend money in aid of the general welfare, and the Supreme Court has also said that Congress decides what serves the general welfare, and Mr. Justice Cardoza said "When a contention comes here," that is, a contention of unreasonableness or exercise of this poyer in an arbitrary fashion, "we naturally require a showing that by no reasonable possibility can the challenged legislation fall within the wide range of discretion permitted to Congress." So that the burden is on him who asserts that this, the expenditure, involved is not in aid of the general welfare to show that by no reasonable possibility can the challenged legislation fall within the wide range of discretion permitted.

SENATOR DONNELL: Mr. Linder, you have gone somewhat beyond the point to which I was addressing myself. The point that I was addressing myself to was, namely, that the Supreme Court of the United States has held that there is no general power to provide for the general welfare created by section 8 of article I, that the reference to general welfare is solely as definitive of the purposes for which taxes, duties, imposts and excises may be laid and collected. Mr. Linder: That is clear.

Senator Donnell: And the power to spend money as pointed out by Mr. Justice Cardoza has been indicated by the Supreme Court to arise as a necessary incident of the power to lay and collect taxes; in other words, if Congress has the power to collect, inferentially, there is an implied power to spend money which it has laid and collected the taxes to secure it. That is correct, is it not? Mr. Linder: Correct.

Mr. Linder: I should like to make clear my personal view with respect to the American Bar Association. If anything that I have said here indicates any personal hostility to the organization, as such, I regret it. I regard the American Bar Association as an organization of lawyers. Many lawyers who belong to the American Bar Association are my friends and are well known to me both professionally and otherwise. I think the American Bar Association, as far as it deals with technical matters, dealing with subjects within the realm of civil and criminal jurisdiction, contributes, takes positions that are frequently taken by the National Lawyers Guild. However, in the tremendously important field of social legislation, in all of those with respect to that whole body of legislative matter which so directly affects the interests of the people of the United States, I think it is true that during the last ten years, at least, the American Bar Association has consistently taken a view which, in the opinion of the National Lawyers Guild, is a view not in the interests of the people of this country.

The American Bar Association has regarded the Social Security Act as unconstitutional. Its representative here this morning appeared before the United States Supreme Court and argued the unconstitutionality of that statute. Not persuaded by the United States Supreme Court and unmindful of the fact that that decision is binding upon him, he still continues his assertions about the constitutionality.

The American Bar Association, in connection with this specific legislation, I think, has taken a position which serves the interests of the people of our country very badly.

In echoing the position of the American Medical Association, the American Bar Association, I think, has taken a very unfortunate position and it is a matter of some regret to me that they have done so.

I think in taking that position, however, the American Bar Association does not bespeak the views of the overwhelming majority of the lawyers in this country.

April 9, 1946

Honorable James E. Murray Presiding

Present: Senators Murray, Wagner, Ellender, Aiken and Donnell.

Statement of Fiorello H. La Guardia, Former President of U. S. Conference of Mayors

Mr. La Guardia: I take it that there is little opposition to the provisions in the early part of the bill on maternal and child health, on the contributions and federal grants for tuberculosis and venereal disease. Your authorization for appropriations is extremely low. I have spent a great deal of money during the past twelve years and I am very proud of what we accomplished in New York City and the program which I left for my successor.

Now we come to the health insurance. Tuberculosis can be licked in this country in twenty-five years if we have proper controls as provided in this bill. The medical side is not enough, you must also have proper housing, proper nourishment in the prenatal stages and in infancy and childhood and proper ventilation and sanitation, and then we will lick tuberculosis.

(Mr. La Guardia described construction of medical facilities in New York under his administration.)

You will find that when you get your maternal care provisions of this bill in operation you will then realize how woefully short this country is of proper maternal care. You will have to build hundreds and hundreds of lying-in hospitals, and it will take you some time to get the necessary personnel to man these hospitals.

A major disease, a major operation or a serious disease will throw a family budget out of gear for a year or a year and a half, and the family is compelled to borrow, and then they get into a worse disease, and that is the loan sharks. And that is another fit. Do not get me started on that because I never stop.

There is nothing new in this plan, it is just pooling the health of the country, that is all there is to it. We pool our health so that the sick, regardless of economic conditions, can get proper care when it is needed. And in five years, gentlemen, if this plan is operated properly, you will be able to reduce your hospital cases and sickness by 50 per cent, and that is no exaggeration.

I am not worried at all about the cost. No matter what the cost is, it is a good investment. Your operating costs will be greater the first five years and then will diminish. If you have the money on the table at this moment and say that you are going to start this plan all over the country on July 1, you cannot do it. It will take time to get this going in the entire country, and it is of great importance that it starts right, and if it starts right it will be perfected and it will click. If it starts wrong, it will take a generation to correct the mistakes.

There has been a great deal said that this would regiment the medical profession. It will not regiment them at all, but it will certainly give an opportunity for the skilful doctor, the studious scholarly physician, that keeps abreast, to develop and grow and to practice his profession. No one contemplates for a moment that skill should not be recognized. Under our plan in New York City we estimate paying some salaries of $25,000 or $30,000, and here is the opportunity for the young graduates of medical schools to have a chance of really getting a start, and in many sections of our country they have no such opportunity.

We are limited in our capacity, in our hospitals, for interns and in smaller communities the young graduate just has to grope his way along. This would provide a constant twenty-four hour medical service, emergency cases would be cared for by the younger doctors, who would immediately call for help if they found a serious case, and provide for office treatment, in the offices of the doctors, and provide for home treatment and for the complete hospitalization, including nursing.

. . . .

(Under questioning by Senators Ellender and Donnell, Mr. La Guardia said he thought a plan could be started only in a limited area.)

Senator Donnell: So that you are recommending an addition to title II. In other words, as I understand your testimony, while it is a nationwide operation, you would defer the benefits of that operation to any given area until the area shall have provided necessary facilities to enable the operation to be successful, is that your thought? Mr. La Guardia: Until the administration can get the doctors in there.

Senator Donnell: Under the nationwide administration? Mr. La Guardia: Your administration is provided for here, and that is quite all right.

Senator Donnell: Which section is it that you are referring to, Mr. La Guardia? Mr. La Guardia: I am referring to the whole thing. I want to point out that, if this was to go into effect on July 1, in many sections of our country we could not provide proper medical care.

Senator Donnell: In other words, you would not then institute a nationwide prepaid personal health service benefit at this time; you would require, as I understand it, that each state, or each area, perhaps better stated, shall have first demonstrated its capacity to take care of the problems before you would impose the tax in that area; is that right? Mr. La Guardia: I would establish a national system, and I would put it into operation and make the charge wherever there is personnel and facilities to give the service, because it would be manifestly unfair, the charge being uniform, not to provide uniform first class services for the same cost.

Senator Donnell: That would necessitate a very different bill from what we have before us here in order to put into effect your suggestion, would it not? Mr. La Guardia: Not at all.

Senator Donnell: There is nothing in title II that undertakes to say that this nationwide prepaid personal health service benefit shall go into effect only piecemeal here and there throughout the United States, is there? Mr. La Guardia: I would put it in.

Senator Donnell: What would you provide there in substance? Mr. La Guardia: I would provide that the Surgeon General may establish health insurance zones, and, as such zones are established, people resident therein shall be entitled to the benefits herein provided, and the Surgeon General shall provide as rapidly as possible proper medical facilities and hospitals, as well as personnel, in all areas, and when such areas have been certified by the Surgeon General they shall become eligible under the plan.

Senator Donnell: You would not assess a payroll tax then in area number one, for illustration, until the benefits of the bill shall have been put into effect with respect to area number one? Mr. La Guardia: That is right.

Senator Donnell: Now, Mr. La Guardia, that is a very interesting suggestion, and I am sure our committee is glad to have it, but to my mind it would necessitate a tremendous change in title II of this bill, because this is a nationwide proposition encompassing and envisaging, as I understand it, an assessment of some kind of a tax, nationwide, rather than starting up a tax in Missouri and Oklahoma and Kansas one week and waiting six months before you put the federal tax into effect in three other states. Mr. La Guardia: You would not put the federal tax unless they were getting the service.

Senator Donnell: Well, Mr. La Guardia, do you think it would stand the test of the uniformity of taxation throughout the nation to impose a federal tax in two or three states and then wait six months before you imposed a federal tax in two or three other states? Mr. La Guardia: Certainly, people in my city drink French champagne and they pay the tax on that, and the people in Iowa do not drink the champagne, and they do not pay any of that tax.

. . . .

(After Senator Donnell caused Mr. La Guardia to explain still further his idea of taking in part of the country at separate times, Mr. La Guardia described still further the New York City facilities.)

Senator Ellender: Now, in addition to the hospitals to take care of the sick, can you not also see the necessity for educating more doctors? Mr. La Guardia: I have stressed that.

Senator Ellender: How would you do that? Mr. La Guardia: With these hospitals. You cannot educate doctors unless you have hospitals.

Senator Ellender: How would you provide for that? Would you say that the Congress ought to provide means by which doctors are to be educated? Mr. La Guardia: Senator there are 25,000 able, competent young students in this country today that cannot get into medical schools because we have not the facilities. That is no exaggeration.

Senator Ellender: Would you provide for the education through federal means or federal funds? Mr. La Guardia: No, they would take care of themselves.

Senator Ellender: They do? Mr. La Guardia: Yes, we had no trouble getting students. The trouble is in facilities. You see, a medical school is not like a law school. A law school you just jam them in, and you throw them in, and they listen sometimes and sometimes they do not listen, and it makes no difference. But in a medical school you have to have the facilities and you have to have your dissecting rooms, and you have to have your labs, and you have to have the facilities and they are limited in number.

Senator Ellender: Would you provide for any funds in order to help them in their education? Mr. La Guardia: No, the hospitals will do that. I am not exaggerating when I say that there are from 20,000 to 25,000 young students trying to go into medical schools and cannot get in.

Senator Ellender: What incentive would there be to those young doctors who propose to take up medicine when they would be confronted with a proposition whereby they would have to join an organization or say they would have to qualify before being employed or their fees would be fixed? Mr. La Guardia: I think the same incentive that you and I had when we went to law school; we would go to Congress some day.

Senator Ellender: I know, but the thing is, you would have a board here in Washington, fixing a set of fees applicable in various areas of the country, by which a doctor would have to abide. Mr. La Guardia: He would make a nice living and render fine services.

Senator Ellender: And, of course, it might lead to being put on a salary basis. *Mr. La Guardia: It is better to be* on a salary basis than have fees and be unable to collect them.

Senator Ellender: You still think that you can get young men? Mr. La Guardia: Certainly.

Senator Murray: There are a great many young doctors today that are unable to exercise their profession because they cannot get any place where they can get business. If they go to the backward sections of the country they cannot live.

Mr. La Guardia: Those people are really martyrs, doctors in this country; there are thousands of them who are just rendering a community service and eking out an existence. Why, old man Dafoe told me he never made over $300 a year until Mrs. Dafoe came along and then he was living in clover, and he got the allowance from the Dominion of $1,800 and he used to come down to my town to celebrate. He was a great old man.

Senator Murray: The establishment of this system would result in greatly increased incomes for the average medical practitioner. Mr. La Guardia: And for the average American family too in savings. The only ones who will suffer are the loan sharks and the undertakers. It will be tough on them.

(Here there was some discussion of state's rights. Mr. La Guardia tried to show that only American Medical Association officials opposed the bill. Under insistence by Senator Donnell he finally said:)

Senator Donnell: But the point I am making is that the American Medical Association, which as I understand it is the largest association of physicians in the country, has expressed itself in opposition to compulsory health insurance, has it not? Mr. La Guardia: As an organization, yes.

. . . .

Senator Donnell: The point I was getting at was this: If in a small community, like the one in which I live, a suburb of one of the Midwestern cities, if I desired to consult with a given doctor, say, Dr. Jones, and his quota is made up, he has 500 patients allotted to him and I am 501 or 502, I cannot receive his services? Mr. La Guardia: He can drop some one else, can he not?

Senator Donnell: I am not sure about that. Mr. La Guardia: Suppose Dr. Jones has just 1 patient. You come along, and he can say "I don't want you."

Senator Donnell: He can do that of course; but if he and I are willing there is nothing to prevent that from existing under the present law existing today, at this minute. Mr. La Guardia: No.

Senator Donnell: But if this law goes into effect and he does have his quota of 500, and he is satisfied with his quota, and I come along and want to get in myself there is no way I can engage him without having him drop some one off his quota? Mr. La Guardia: I think that is an extreme determination, Senator.

Senator Donnell: It is true, is it not? Mr. La Guardia: Yes.

(Mr. La Guardia, aided by Senator Murray, defended the thesis that it made little difference to the patient to have individual choice of a surgeon.)

Statement of Joseph W. Fichter, Chairman, Joint Subcommittee on Health of the National Planning Association

Mr. Fichter: I am master of the Ohio State Grange and chairman of the Committee on Health of the National Grange. Since I am appearing before you as chairman of the National Planning Association subcommittee, it may be useful to those of you who may not be entirely familiar with National Planning Association's background to have a brief explanation of its approaches to the study of national problems.

National Planning Association is a nonprofit, nonpolitical organization established in 1934. For the past several years NPA's work has been carried out mainly by four standing committees: three on National Policy—the Agriculture, Business and Labor committees; and one on International Policy, which weighs the international implications of the problems under consideration by the Committees on National Policy. I have here a leaflet, which I will be glad to submit to you, which includes the names of NPA's board and committee members.

The Joint Subcommittee on Health—for which I am speaking this morning—was set up by the Committees on National Policy in 1945 and includes members from each of those committees. Incidentally, I serve regularly as a member of the Agriculture Committee.

First we investigated the cost of a campaign to wipe out tuberculosis and compared this with the costs of going on with this disease year after year, as we do now. Second, we examined the cost of building enough new hospitals to provide beds for all who need hospital care and the amount of materials and manpower required to build them.

(He described eradication of tuberculosis in cattle.)

(After discussing various projects for control of tuberculosis in human beings, Mr. Fichter said:)

MR. FICHTER: If we add up all these amounts we find that a total of about $186,850,000 public and private funds was spent on this disease in 1943; and because this was a war year practically no construction of new hospital beds was undertaken. Yet this very large sum which is spent on tuberculosis annually takes no account of the personal income lost to families which occurs when wage earners die or are disabled by this disease or of the output of goods and services lost to the nation from this cause. Such losses are especially important in the case of tuberculosis, since this disease tends to strike men and women during the most productive period of their lives—between the ages of 20 and 45.

One year's deaths and illness from tuberculosis caused a loss in potential wages for that year alone of over $181,627,000. Faced with an annual expenditure of $186,850,000 and an annual wage loss of $181,627,000, it would certainly seem worth while if for economic reasons alone to try to eliminate tuberculosis.

(*He described the technic for stamping out tuberculosis.*)

With such facts as these in mind we tried to estimate the cost of carrying out a campaign to rid the United States of tuberculosis in the next ten years. We began with the problem of finding the cases. Children under 5 should be given tuberculin tests, which could be done by their own doctors as a part of their routine examinations. They need x-rays only if these tests prove positive. Older children can be x-rayed on entrance to school and, if found negative, need not be examined again until they are 15. The new cost would be the examination of the adult population.

It would be feasible to examine the entire population above 15 years of age in the United States in the course of five years. Taking this population in 1943, we find that it would require 102,508,000 x-rays to examine it once, or about 20.5 million x-rays a year. Of course, one examination would not be enough and the procedure should be repeated in the second five years. In addition we would follow up "the contacts"—people who had been in closest contact with those found to have tuberculosis—and probably should x-ray them every six months. If all those ill with tuberculosis were treated in sanatoriums during this period, so that the disease was not being communicated to others, we should have reduced the disease to such negligible proportions by the end of the ten years that only occasional testing would be necessary and, of course, testing for people who came into this country after they have been in other countries.

The new technics of mass x-raying have greatly reduced the costs of such examinations. At a cost of 25 cents a case the 20.5 million x-rays would cost about 5.1 million dollars. And this yearly cost would continue throughout the ten years of the campaign.

How many people would be needed to carry out this undertaking? It has been found that a unit consisting of one medical officer, one technician and one clerk can efficiently take 1,000 pictures a week, or 50,000 a year. It would require at least 410 such units to examine the 20.5 million people each year of the campaign, because each unit cannot work at peak efficiency in sparsely settled areas.

The cost of following up "the contacts"—the group in the population most in danger of breaking down with the disease—is estimated to be about $1,800,000 a year for the first five years of the campaign, but thereafter it would diminish. This figure is based on an average of three contacts for every case of tuberculosis found and a cost of around $10 a year for follow-up work on each contact.

It does little good to find cases if we cannot provide places for them to receive treatment where they will not infect their families or neighbors. We would have to provide new tuberculosis beds for the new cases found, but this would be a nonrecurring cost and the task should properly be undertaken before the mass x-rays are started, so we will discuss this construction cost a little later.

Assuming that we have enough beds to permit all who needed them to have one, what would it cost to maintain the patients in those beds throughout a year? According to our estimates, we would probably have about 133,000 patients in hospitals for tuberculosis in the early years of the campaign. After that there would be a considerable reduction. Using a 1943 cost of $3.50 per patient day, the maintenance cost would be about $173,000,000 for a peak year.

We found that we would need, to care properly for this number of patients, approximately 47,900 professional personnel: 3,000 physicians, 27,800 nurses, 4,600 technicians, 9,200 clerks and 3,000 others. About 6,900 attendants and orderlies would be needed, and about 30,900 domestic workers.

We should also have to spend a large sum on health education, because people would need to understand the value of the examinations and treatment, the need for continuing treatment until they were really well and the care needed to avoid infecting others with the disease. Probably we should have to spend about $12,000,000 a year on such work, at least during the first years of the campaign.

The provision of rehabilitation services for patients with tuberculosis is another essential of the campaign. Such services are those necessary to render a patient fit to engage in a normal economic and social life. Because tuberculosis is a chronic relapsing disease, patients have to avoid overexertion even after their cases are arrested and apparently cured. It is often necessary for the patient to learn a new way to earn his living, and this is especially true if his former occupation involved excessive physical exertion. If we fail to keep the tuberculous person permanently well we waste the funds spent on finding him and on medical care and hospitalization.

Instruction for those who need further education and vocational guidance and training should be available for all people in sanatoriums who could profit by them as soon as the physician has said that it is medically safe for the patient to start some activity. Librarians, occupational therapists, vocational counselors and medical social workers are needed for this work in addition to teachers. In the peak years of the campaign when all the beds were being used, an adequate rehabilitation program might cost $20,000,000.

Financial assistance to families in which the wage earner has tuberculosis is a necessary part of the campaign. Many a patient refuses to go to a hospital when he is first told of his condition because he is worried as to how his family will manage. Instead, he continues to work until the far advanced stage of the disease forces him to bed, and by then medical care can do little for him. Or he accepts bed rest in a sanatorium until he feels stronger and leaves before he is well, to earn more money for his family. After a few months of work he often breaks down again with an advanced stage of the disease. Also he may have been spreading tuberculosis among his children and his fellow workers.

Financial assistance under the three public assistance titles of the Social Security Act may give some help to the family of the tuberculous patient. For example, aid to dependent children provides assistance to families when incapacity prevents a parent from supporting the children. Payments under this program are financed by state and federal funds and vary among the states. In May 1945 monthly payments ranged from an average of about $21 to $89 per family. Unless the family has other resources, these amounts are not adequate for today's living costs. Dr. L. I. Dublin of the Metropolitan Life Insurance Company suggests that $1,500 might be the average annual compensation for such a family. Allowing $1,500 for families who needed it, the cost would be about $57,000,000 in the peak years of the campaign. This is based on an assumption that about 80 per cent of the tuberculous male heads of families would have had incomes of less than $5,000 and hence would not have enough savings to tide them over a year or more without earnings.

The last of the recurring items of expense in the campaign years would be for medical research. Probably $3,000,000 a year should be available until satisfactory results are obtained in the search for a drug that would kill the bacillus, especially in view of the rapid travel that will bring people into contact with the disease in other parts of the world. When we add all these expenditures, we find that it would cost about $309,900,000 annually for recurring items in the peak years of the campaign.

However, we must also consider the cost of construction of the necessary tuberculosis beds. These should be started before the mass x-rays are begun and should be completed in the first year of the campaign, as the patients found must have places to go for adequate treatment. Although this would mean a large initial expenditure, the elimination of the disease would release the beds for use for other chronic diseases or for homes for convalescents and the aged. Accordingly, as part of an adequate hospital construction program, the new hospitals for tuberculosis or new tuberculosis additions to other hospitals should be so located and built that they would be suitable with the least alteration possible for these other hospital purposes. The real value of these facilities at the time they were turned over to other uses could then be deducted from the total cost of the tuberculosis campaign.

It is estimated that we would need about 154,000 plus tuberculosis beds in the first years of the campaign. Since there are about 79,000 adequate beds now in existence, we should build 75,550 new beds. Although we recognize that present costs of building these beds would be at least $7,000 a bed, we have made our analysis in terms of 1943 prices as we have done in the rest of the study. Figured in this way the beds would cost $5,000 each, or a total of $377,000,000 plus, which would include the cost of construction and equipment.

The value of these beds at the end of the ten year period would be about $309,000,000 plus, assuming a straight line depreciation and a life of fifty years for the facilities. Accordingly, it may be said that only $67,995,000 of the costs of the hospitals should be assigned to tuberculosis.

To sum up, expenditures during a peak year of the campaign to eliminate tuberculosis would be about $309,900,000, and they would decrease as the campaign progressed and virtually cease at the end of ten years. In addition, about $68,000,000 could be charged to the campaign as the cost of tuberculosis hospital construction. We can see that this is not an extravagant campaign when we compare it with the $186,850,000 now being spent annually on this disease and when we remember that tuberculosis causes a loss of wages and of production.

THE HOSPITAL PROGRAM

The suggested plan, which has been described by the United States Public Health Service, would require a careful analysis of the hospital needs of each state and of areas within the state as related to distribution of population. It would aim to extend facilities and service to all persons regardless of geographic location in such a manner that some health facility would be available within a reasonable distance of every home in the state. The plan assumes that financial barriers would not keep patients from using the hospital services when needed; its effectiveness would depend on the degree to which this was possible.

The different facilities in the plan would be coordinated so that each unit would act as one part of total community health. In order to avoid unnecessary expense and duplication of equipment and personnel, only limited facilities would be contemplated in outlying districts, with the understanding that, where necessary, patients would be referred to larger and more central institutions. Large base hospitals could thus serve a broad region. Existing hospitals could make arrangements to fit into the integrated system according to the types of service which they are able to perform.

To equip the United States with sufficient facilities to make this plan effective, it was estimated that it would be necessary to build 231,000 general, 75,550 tuberculosis and 212,556 nervous and mental hospital beds, or 519,000 beds of all types. Of these 340,000 would be new and 179,000 would be replacement beds. These estimates were taken from the testimony of Dr. Parran, the Surgeon General of the Public Health Service, before the Senate Committee on Education and Labor in hearings on Senate Bill 191 in 1945. This estimate does not include the beds which might be needed for long chronic diseases, nor does it include the plans of the Veterans Administration.

Using 1943 prices, we found that construction and equipment of these beds would cost about $2,600,000,000 plus. We assumed a cost per bed of $6,000 for the general bed, $5,000 for the tuberculosis bed and $4,000 for the nervous and mental bed. We realize that present construction costs are considerably higher but, to keep our estimate throughout the report comparable, we have had to use the year 1943.

Under this plan it would also be necessary to build about 14,000 health centers at prices ranging from $35,000 to $75,000 a center. These centers would be equipped to diagnose and to treat ambulatory patients and to perform the more traditional health department services. In communities which lack other medical facilities, the health centers might also include some hospital beds for emergency cases. The total construction and equipment cost of those centers would be about $679,765,000.

This, the total cost of building and equipping hospital beds and health centers, would be approximately $3,000,000,000 plus. Carrying out such a program would have a direct effect on the construction industry and an indirect effect on many other industries. In studying this effect it is necessary to separate the construction and equipment costs.

The total construction cost of the program would be about $3,000,000,000. Information derived from Labor Department figures show that according to past experience this would mean (in 1943 prices) an expenditure of $921,000,000 plus for labor at the construction site, of $1,485,000,000 plus for materials and of $604,000,000 plus for "other" expenses and profit. Exhibit B shows the type of materials, such as electrical wiring and fixtures, forest products, iron and steel, and so on, and the values of the orders which would be placed.

Approximately 2,000,000,000 plus man hours would be created by the proposed construction program. Of these, 771,000,000 plus would be at the construction site and 1,310,000,000 plus would be in mines, forests, factories, transportation and administration.

Statement of Helen Hall, Director, Henry Street Settlement, Appearing for National Federation of Settlements

MISS HALL: There are those who will tell you to go slow in setting up the "Nationwide System of Prepaid Personal Health Service Benefits" projected in section II of the National Health Bill (S. 1606). That section means health insurance, and in supporting it I am reaffirming a stand which our National Federation of Settlements took as early as 1917.

To argue for delay is only too often a shabby device to defeat some progressive move that can't be downed on its merits.

It would be out of the question for any one to live as we do in industrial neighborhoods without recognizing that it is high time for working people to be protected against a double hazard—against sickness compounded with loss of wages. That is why settlement workers have so long been concerned about it. Year after year it has been driven home to us what the lack of such protection can and does do to family life.

Over the years we have seen opposition to an American system of health insurance—built up around false assumptions, at least so they seem to us. One of these assumptions hinges on an unwillingness to face the actual lack of adequate medical care among millions of American families.

Another false assumption has been that prepaid medical care —such as this bill proposes—must necessarily be bad. That contention was used in the 1930's when health insurance was struck out of Franklin Roosevelt's initial program for social security.

SENATOR DONNELL: Miss Hall, who do you mean it was who struck out that health insurance from this program? MISS HALL: The opponents of it.

SENATOR DONNELL: Was there a measure pending? MISS HALL: I sat on the President's Advisory Committee on Social Security, and in the early days there was then a plan for health insurance in the bill and the opposition was so great that it was taken out.

SENATOR DONNELL: Was the bill on the floor of Congress when the provision for health insurance was taken out or was it taken out preceding the introduction? MISS HALL: Preceding the introduction. I presume it was taken out so that the whole bill would not be killed. The same thing had been said in the 1920's when Herbert Hoover's Committee on the Costs of Medical Care aroused nationwide discussion of comprehensive coverage for the United States. To support this contention, two rusty clichés are repeated over and over again. One is that the doctor-patient relationship would be impaired. Another is that the free choice of physicians would be endangered. As to the doctor-patient relationship, our National Federation of Settlements in 1938 made a first hand study in twenty-three cities located in sixteen states of what their neighbors do when they are sick. This inquiry brought out that two thirds of those interviewed had no family doctor at all. Even in the case of the third that claimed to have one, the connection was often nebulous and unsustained. You cannot have a patient-doctor relationship with a doctor you can't afford to use.

Then there is the free choice of physician. Opponents of health insurance who put such stress on it often claim at the same time that outpatient clinics and hospital wards can be looked to to supply the needs of the low income sick. Yet they have to admit that there is seldom free choice of doctor and scant doctor-patient relationships of the sort they prize in either a clinic or a ward. They refuse to face the truth that both the relationship and the free choice can be counted on only in higher income brackets than are dealt with in this bill.

To say this is no reflection on the medical profession, which probably gives more of its time and skill than any other calling. But that is no reason why, when sickness strikes otherwise self-reliant families, they should have to be dependent on medical generosity or on public and private aid at the indigent level nor why we should not all frankly recognize that as a whole these families need much more than doctors can or should give away.

It is hard to understand why the insurance principle, which is used to spread risks and to safeguard almost every other contingency of our lives, should be thought so unmanageable when applied to protecting health among people in the low income brackets or when the government has anything to do with it.

I am sorry to see only limited nursing service in the bill, because a good visiting nurse not only speeds the patient's recovery but teaches the family what to do in the other twenty-three hours of the day and night when she may not be there. It sometimes seems that the greatest differential between the rich and the poor in time of sickness lies in the nursing care they can afford. Visiting nurses in the United States bridge that gap as they climb tenement stairs or travel around small towns or ride over the long stretches in country districts. Any one who has seen a visiting nurse come into a home and in short order make sickness seem manageable to a scared and sometimes ignorant family will know how important a part the nurse plays in the health plan.

(Miss Hall described a number of cases in her experience indicating lack of medical care.)

(Miss Hall next discussed British experience.)

SENATOR DONNELL: I observe in the course of your statement you mentioned two experiences you have had with army physicians. One shows a quite satisfactory result; namely, the one in the South Pacific; the other doctor, on a serious illness in France in World War I, which you described as some pretty casual treatment. I understand from your experience in one case it was quite satisfactory and in the other, I judge from your language, it was rather unsatisfactory. Is that correct? MISS HALL: That is right. And I would say I have had exactly the same experience with private physicians. That is what I meant to imply, that I do not think the treatment had anything to do with the fact that they were army doctors or paid by the government, but that one was good and the other was not. Exactly the same thing happens in private practice. A good doctor is a good doctor, and one that is not is not a good doctor.

(Senator Donnell questioned Miss Hall extensively on free choice of physician.)

SENATOR DONNELL: The question I asked you was, under the existing system today, in the absence of a statute, every doctor has the right to make his own determination as to whether he can or cannot increase the number of patients he is treating? MISS HALL: That is correct.

SENATOR DONNELL: Whereas under the bill, the Surgeon General would be the determining official who would determine whether or not the doctor could take a given person? MISS HALL: That is right.

SENATOR DONNELL: Because the Surgeon General could determine, as the act states, the maximum limits to the number of potential beneficiaries. MISS HALL: That is right.

SENATOR DONNELL: So we do have a difference between that and the present system under which the doctor uses his own judgment. The system under S. 1606 is the Surgeon General through this limits the number of potential beneficiaries, he makes that decision for each individual. MISS HALL: That is correct. I would say that the medical profession, as a whole, made the decision rather than the individual doctor, which might be preferable, and I would like to say a word on that.

SENATOR DONNELL: I would be glad to have you do it, but at that point I notice that subdivision (j) in section 205 does not say that the medical profession makes the decision but says that the Surgeon General may prescribe the maximum limits to the number of beneficiaries. MISS HALL: The Surgeon General is a doctor.

SENATOR DONNELL: But he is not the profession. MISS HALL: My understanding of the bill is that the medical decisions are made by doctors alone, by the medical profession alone.

SENATOR DONNELL: Regardless of whether that decision is by the medical profession, it may have the effect in individual cases of preventing a prospective patient from securing the doctor whom he or she would like to secure? That is correct, is it not? MISS HALL: That is correct. Senator, I would like also to say that the lack of money also puts you in the same position.

SENATOR DONNELL: That may or may not be correct. MISS HALL: That is true.

SENATOR DONNELL: I think it was pointed out in your testimony that the generosity of the physicians is well known, and many physicians have given services freely and generously even to their own great detriment. MISS HALL: But I also pointed out I did not think that could cover the whole needs of the American people and that we should not ask them to do it.

SENATOR DONNELL: That is quite true. I do not think there is any necessity in asking them to do that, but I think there is an alternative other than the federally controlled compulsory health insurance. MISS HALL: This looks good to me, anyway.

. . . .

MISS HALL: Senator, I do not think people in America have the choice of physician. Two thirds of them do not have a physician.

SENATOR MURRAY: And nine out of ten people in America would not know how to select a physician? MISS HALL: And one third, I have talked to them, I know these people have no choice of physician. It is really a myth.

SENATOR MURRAY: I think you are right.

MISS HALL: People talk about a choice of physician. After all, people who cannot afford a physician cannot have a physician.

SENATOR MURRAY: And many, if they tried to select a physician, they would make a mistake?

MISS HALL: Do you have any choice of a physician in a clinic? Certainly not. There is very little choice of physician in the case of people this bill applies to. Of course, there is in our case.

SENATOR MURRAY: And when they do not have the choice of a physician or the right of a choice of a physician they get adequate and effective and efficient service. I know of cases where people have traveled all across the continent of the United States to get to Johns Hopkins Hospital, and when they get there the surgeon they intended to be operated on by is either too old or sick or unable to operate, and the patient is operated on by an assistant with a very efficient operation, and it is satisfactory in every detail. That happens frequently. So I agree with you that this idea of the right to select is somewhat exaggerated at least. MISS HALL: Two thirds exaggerated.

SENATOR DONNELL: Two thirds? MISS HALL: Two thirds, in our study, Senator, have no family physician.

SENATOR DONNELL: Pardon me, Miss Hall. At any rate in the first place, what you mentioned in your testimony was unemployment insurance, was it not? I do not recall whether you mentioned workmen's compensation or not. I think you mentioned unemployment insurance. MISS HALL: That is right.

SENATOR DONNELL: And there are the differences to which I have referred between unemployment insurance and health insurance? MISS HALL: Yes, certainly. That is what I think is so sad, some of the differences.

SENATOR DONNELL: Senator Murray clearly indicated to you his doubt as to the ability of the average individual to select a physician, and as nearly as I can recall, his suggestion was that the chances are that nine times out of ten the person would not know how to select his own physician. Do you concur in that view? I did not observe your answer as indicating concurrence. MISS HALL: I do not think I have any statistics on that subject.

SENATOR DONNELL: Do you think nine people out of ten are not able to select their own physicians in this country? MISS HALL: I would not for a minute say what percentage, Senator, because I have never made a study of that thing. I would say this: that people in the working class areas are often very ill able to know which physician is best in that area for them to go to. Suddenly a child will get sick in the night, and they have not even thought of a physician before, and they run outside, over to a cousin or a neighbor, and they say "Mary is sick. Whom will we get?" And this one says "This one took care of us; you had better go down there," or "This one is on the corner. You will only have to go two blocks." That is not a very careful choice. I do not know whether you call it free choice, but it is not very important.

SENATOR DONNELL: The point I was getting at is whether or not you concur in the view—if I have correctly quoted the Senator, and if I have not, I want him to correct me—that the chances are that nine times out of ten people would not know how to select their physicians.

SENATOR MURRAY: I think I would like to correct that. I meant that nine times out of ten they would not be in a position to. People in this country change residence a great deal. They travel a great deal, especially among the workers of the nation.

I will admit that the richer class think they know how to select a physician. Certain physicians have very attractive "bedside manners" and friendly associations in society, but that does not prevail among the great masses of the American people. They very seldom know a doctor intimately. If a doctor meets them on the street they do not recognize him, do not recall him. That situation prevails broadly in the country and I think among the great masses of the American people. They are generally in a situation where they would not be able to select the doctor efficiently that they should have in an emergency or in a sudden illness. MISS HALL: That I would agree to.

(Close questioning by Senator Donnell led Miss Hall to conclude that there would be quite a rush among patients to get first on the list of the ablest physicians.)

Senator Donnell: Now, Miss Hall, you know the organization known as the International Labour Office, do you not? Miss Hall: Yes.

Senator Donnell: May I read these two sentences, which I would think are applied to Chile:

"The fact is that once the whole employed population, wives and children included, is brought within the scope of compulsory sickness insurance, the great majority of doctors, dentists, nurses and hospitals find themselves engaged in the insurance medical service, which squeezes out most of the private practice on the one hand, and most of the medical care hitherto given by the public assistance authorities on the other."

Have you observed that, as the number of insured persons increases, the tendency that I have just read develops? Miss Hall: No. The point is this: The doctor does not have to take a panel patient. He can take as much private practice as he wants. If he wants to take three quarters private practice and one quarter panel, he can do it. So the panel is not forced on him by the government. If he wishes to take it he can. Maybe the system in Chile is different. I do not know; but that is the answer to that, that you can take as much private practice as you want and can choose as much panel practice as you want.

Senator Donnell: If the United States should adopt a plan under which the whole employed population is brought within the scope of compulsory sickness insurance, the great majority of doctors would find themselves in the insurance medical service. Miss Hall: What I would hope is that we would have enough doctors to take care of the whole population.

Senator Donnell: But we would find the tendency, with the increase of number of persons insured, that more and more doctors would devote themselves exclusively to the work of the government? Miss Hall: That would be their choice, but they do not have to.

Senator Donnell: But that would be the tendency, a decided tendency, in your opinion? Miss Hall: I think that doctors do certain kinds of private practice; they probably would stay and take a few panel patients. This is the way it seems to work in England, by the way, and we have not got any other experience.

Senator Donnell: May I ask you, do you agree with this statement which appears in the report of the National Labour Office, 1944:

"A national medical service is already in operation in New Zealand and in the Soviet Union, where every inhabitant is entitled to free medical attendance, drugs and hospital treatment. In the former country no change has been made in the method of furnishing medical care, which remains that of individual practice; the doctor is refunded by the state a fixed fee per visit or consultation and is not legally entitled to additional remuneration from the patient." That is National Medical Service. Miss Hall: That is not health insurance. The Russian system is that the doctors are paid by the government, but that is not what we are asking for in this bill.

Senator Donnell: Let me ask you this question also. Take a religious organization, we will say. Take, for instance, the Christian scientists. I am not entirely familiar with their teachings, but I understand generally that they feel that treatment by physicians is not necessary, that they rely on their religious views to have healing, at least in large part, perhaps entirely. What is your comment, if any, with respect to a law which would impose on the people in great numbers, such as the Christian scientists, the obligation to pay taxes toward the support of a compulsory health insurance in which they would feel that it is unwise and improper that they should participate? What is your judgment on that? Miss Hall: I might say that I pay taxes in the country for schools and do not use them. I do not mean that I do not believe in schools, but I do not use the schools that I am paying taxes for. I think a great many of us pay taxes for the things that we do not use ourselves. I do not think that is a great hardship on the Christian scientists. Maybe, as the years go on, we can work something out. I would not say that was any great deterrent.

Senator Donnell: Take a situation in which a great religious organization does not believe in either the efficacy of or the advisability of submitting their members to health treatment under such a law. Do you think that in fairness to them they should be subject to the obligation to contribute by taxation to the support of such a system? Miss Hall: I think a Christian science witness would do better than I would.

Senator Donnell: I am asking for your opinion. Miss Hall: I have not thought about it.

Senator Murray: Let me ask a question here, please, Senator. Do you not feel that, if the American people should feel that the national health system is essential for the welfare of the whole country, there would not be anything unreasonable in seeing to it that all the people of the country contributed to the support of that kind of a system? Miss Hall: I would feel so, Senator, on the basis that many of us pay for things that are good for the country as a whole that we may not personally benefit from or even believe in.

Senator Murray: That is right. In a democracy the majority rules. If a majority of the Americans feel it is essential for the health and welfare of the nation that we should have a system that would make medical care and hospitalization available to all the people, you think there would not be anything unreasonable in asking all religious sects in the country to support that kind of system? Miss Hall: Yes.

Senator Murray: There would not be any injustice to them if they did not want to avail themselves of it, and they would not be compelled to. As a matter of fact, a good many of the members of that organization do fail to avail themselves of medical care or medical service, often to their great detriment in the final end. We had an ambassador from England here a few years ago who died as the result of his failure to call medical care, because he was a member of the Christian science sect, and as the result he died, and the physician afterward claimed that if he had only consulted a physician he could have lived many years. At any rate you find no difficulty in satisfying your mind that the American people have a right to have that form of health care and hospitalization in this country which is necessary for the protection of the health and for the welfare of the American people? Miss Hall: Yes, I have no difficulty whatsoever.

Statement of Miss Caroline F. Ware of the American Association of University Women

Miss Ware: I am glad of the opportunity to express to this committee the support of the American Association of University Women for the National Health Bill, S. 1606. Many of our 80,000 members and over 900 branches, in communities large and small throughout the country, have been deeply concerned with the health needs of their communities. The fact that we have received more orders for our study guide, "Medical Care for Everybody?" than for any other guide which we have issued in recent years is evidence of the very widespread interest in the subject among our members and their determination to study and inform themselves on the problems and issues involved.

On the basis of such study throughout the association, our convention last May voted eleven to one in favor of federal "measures to enhance the health and efficiency of the population, including continuation and expansion of the rehabilitation program for both veterans and civilians, an effective nutrition program and federal funds, if necessary, for the extension of hospital and other public health facilities and personnel."

Senator Donnell: May I ask a question here? I do not observe in what you have read as the action of the convention last May any specific mention in terms of compulsory health insurance. Is that mentioned in it? Miss Ware: Our latest program also includes extension of coverage of social security. The national committees of our association, whose responsibility it is to interpret action of the convention in terms of specific legislation, have found that S. 1606 embodies the principles stated by the convention. Our procedure is this: We never act on anything which we have not studied first. Then a tentative legislative program in terms of general principles is drafted. It is submitted to all the branches of the association who will study and discuss it, and they express their opinions. It is not a vote. It is simply an opinion. Before the drafting of the program it is in the hands of two national committees, one in the field and one general legislative committee, and of course it is in the hands of the board. Then this proposal goes to our branches. They study it and discuss it and express their views on it. On the basis of the views expressed by the branches, the proposed program is revised and it is then submitted for vote by the convention in terms of general principles. Then as each piece of legislation comes up the legislation is referred to the same national committee, the committee in the field, in this case the National Social Studies Committee, and the Legislative Committee. Then those committees determine as to whether in their judgment the principles voted on by the convention include the legislation in question. That procedure has been followed with respect to the bill at hand.

Senator Donnell: May I ask you one or two other questions? How large an attendance was there at the convention last May in which this vote occurred of 11 to 1? Miss Ware: The convention was not held physically because of the transportation difficulty. It was held by mail from each community, and the numbers of the votes were approximately 2,000.

Senator Donnell: And that vote of 11 to 1 was in favor of "measures" down to the word "personnel"? Miss Ware: Yes. And also approximately the same or slightly higher for the development of the Social Security program, including an extension of coverage, protection of veterans' rights under old age and survivor's insurance, temporary and permanent disability insurance and other items which I will not take the time to read.

Senator Donnell: The two committees interpreted this resolution? Miss Ware: Yes.

Senator Donnell: What is the total membership of those two committees? Miss Ware: Ten or a dozen people on each committee.

Senator Donnell: So from twenty to twenty-five women constitute the membership of those two committees? Miss Ware: Yes.

Senator Donnell: And those twenty to twenty-five individuals have undertaken to interpret the meaning of approximately 2,000 persons' expressions? Miss Ware: That is a continuing process in our association.

Senator Donnell: Which is what happened? Miss Ware: That is the way in which our democratic procedure works, just as you represent your district and interpret as an individual what you think are the ideas of your district.

Senator Donnell: You state that "our convention voted 11 to 1." That should be revised to say that there was not any convention? Miss Ware: Yes, there was a convention. It was a convention by mail. It went through all the convention procedures and according to the judgment of our parliamentarians completely conformed with the convention form prescribed.

Senator Donnell: As I understand it, "convention" means coming together, "con venio." Miss Ware: You will have to argue with our parliamentarians and the Office of Defense Transportation, who concluded that this was a bona fide convention. The procedure was all gone through. We used transcriptions for the speeches and in every way held a wartime convention conforming with the requirements of the Office of Defense Transportation and with our own by-laws.

Senator Donnell: How many people were present at this convention? Miss Ware: The delegates.

Senator Donnell: Did you come together at all? Did anybody come together? Miss Ware: No.

Senator Donnell: And yet you call that a convention? Miss Ware: Certainly.

Senator Donnell: I doubt exceedingly if the Office of Defense Transportation would have considered you were violating any regulation which was purely on paper and not actually accompanied by physical attendance. Miss Ware: We did it in order not to violate the regulation.

Senator Donnell: You realize, do you not, that there was no convention held? Miss Ware: No, I certainly do not.

Senator Donnell: I certainly do. There could have been no convention held when you did not come together. Miss Ware: I am merely quoting the judgment of our parliamentarians on the basis of our analysis of the rules and by-laws, which call for convention. It was not my independent judgment, please understand. I am merely giving the source of judgment that we held a convention legally and conducted convention business last May.

Senator Donnell: But in the resolution which was voted on by mail there is no specific mention of compulsory health insurance? I am right, am I not? Miss Ware: You have the text as I have quoted it.

Senator Donnell: I say, I am correct in stating that there is no express mention of compulsory health insurance? Miss Ware: Senator, you can read it.

Senator Donnell: Could you just answer that question? Is there anything in the resolution other than what is stated here? Miss Ware: Why do you ask the question when you have the text before you?

Senator Donnell: I ask you, is there any specific mention of compulsory health insurance in the resolution adopted by the process you have described? Miss Ware: I have read you the text. I do not see why you are asking the question.

Senator Donnell: I just want you to answer it. Miss Ware: Why do you want me to answer it?

Senator Donnell: I want to know if there is any express mention of compulsory health insurance. Miss Ware: Do you want me to read it?

Senator Donnell: No, ma'am. I heard you. Was there any mention of compulsory health insurance in anything that your convention, so called, adopted? Miss Ware: I have read you the text.

Senator Donnell: Do you decline to answer that question? Miss Ware: I answered it with the text.

Senator Donnell: May I ask you this, then: Is there anything in this text or anywhere else adopted by this so-called convention which contains express mention of federal compulsory health insurance? Miss Ware: No.

Senator Donnell: Very well. That is all right.

(Miss Ware presented a prepared statement indicating that her organization favors Senate bill 1606.)

April 10, 1946

Honorable James E. Murray Presiding

Present: Senators Murray, Donnell and Smith

Statement of Dr. Clark Foreman, President of the Southern Conference for Human Welfare

Dr. Foreman: The Southern Conference for Human Welfare is a nonprofit organization working for the betterment of the South in order to help improve the whole nation. We unequivocally endorse the President's National Health Program and S. 1606, the Wagner-Murray-Dingell National Health Bill, the main measure to carry it out. We in the South know a lot about ill health and inadequate medical care, because we have more of both than any other section of the country. We have worse Selective Service rejection infant and maternal mortality rates than does any other part of the country. We have fewer doctors, dentists and hospitals than any other section; and yet, because of lack of purchasing power, we do not even utilize fully those we do have. Our rural and our Negro populations are hit the hardest, but our industrial workers and the middle income group are not so much better off. The Southern states had a 40 per cent higher Selective Service rejection rate than the rest of the nation. Our rejection rate was 50.4 per cent, while that of the rest of the country was 35 per cent.

. . . .

Our maternal mortality rate is 3.6 deaths per thousand; that of the rest of the country 2.2, or 40 per cent less. Our infant death rate is 48.6; that of the non-South 40.6. The two main sources of this misery are clear, namely poverty and inadequate medical services. What are the inadequacies of our health service? Our sanitation is miserable. According to the U. S. Public Health Service 657,799 Southern rural homes have not so much as an outdoor privy, much less an indoor toilet. Does private or voluntary health insurance offer us the way out? We do not think so. The private medical insurance we can get now is far too expensive and does not meet our health needs. The commercial policies sold provide small amounts of cash, not medical care, in the event of disabling illness; but they have such a huge overhead that only 40 per cent of the premiums paid in comes back as benefits. The rest goes for company administrative costs, profits, commission and the like. Blue Cross hospitalization is good as far as it goes, but it does not go very far. If one belongs to an eligible group, it costs a family about $24 a year but covers *only the hospital bill*. Yet doctor services alone take three times as much in the average medical dollar. Most incomes are so low such an outlay is too much. There are some medical society plans available but they offer even less. They cost about as much as Blue Cross and cover only the surgical or obstetric fees. They do not cover preventive, diagnostic or home and office care. Much of the best we have now comes from government sponsored voluntary prepayment plans under the Department of Agriculture; but even these suffer from the inherent defects of voluntary medical insurance. The Farm Security Administration has been able to work wonders in assisting half a million low income farmers to form voluntary health associations for prepaid medical care. The associations have improved the health of these families considerably, but they are not enough. Adequate medical care costs $100 a year, according to experts, and poor families cannot raise such amounts, no matter how they pool their resources. Further, turnover in membership, low percentage of eligibles joining and other problems have beset these organizations.

We expect to be entitled to go to our family doctor or any other doctor participating in the system, and most will participate, though they will not be forced to. Instead of putting our money on the line at the time we receive the care, or paying the bill later, we will go to the doctor or hospital when we need to. They will collect the money for the service rendered by a suitable arrangement with the insurance fund. There would be no direct financial dealings between doctor and patient. Instead there would be, as there ought to be, a strictly professional relationship. Doctors will not have to spend so much of their time and energy trying to collect bills, and we will not have to hold back on going to doctors because we cannot afford the cost. The same goes for the hospital.

Senator Murray: Thank you, Mr. Foreman. Have you studied the bill in detail, the various provisions of it? Dr. Foreman: Senator, I have studied some of the provisions of it in detail. I have read the President's message and I have gone into certain aspects of it, but I have not studied the whole bill, item by item.

. . . .

Senator Donnell: Dr. Foreman, are you a physician? Dr. Foreman: No, sir.

Senator Donnell: You hold a degree of what? Dr. Foreman: Doctor of philosophy.

(Dr. Foreman described his educational background.)

Senator Donnell assumed the Chair.

Senator Donnell: Doctor, the organization the Southern Conference for Human Welfare is how large an organization, and how is it constituted? Dr. Foreman: It is composed of some six or seven thousand people who are voluntary joiners of it. Those in the South are members, and people outside the South who care to join, may do so as associate members.

(Senator Donnell questioned Dr. Foreman closely as to his authority for stating the position of his organization.)

Senator Donnell: Now, had either the membership at any meeting held by it, or the board of representatives at any meeting held by it, prior to the meeting held in Durham, passed any resolutions with respect to S. 1606? Dr. Foreman: Not with respect to this particular bill. We have, however, gone on record repeatedly as in favor of federal aid to health and education, and this is so completely in line with the policies of the membership and the board of the Southern Conference for Human Welfare throughout its history, that I, as president, feel perfectly qualified to take the responsibility of committing the board and the membership on it.

Senator Donnell: Has either the membership or the board of representatives ever gone on record specifically with respect to compulsory health insurance? Dr. Foreman: I am inclined to think that they have not.

Senator Donnell: The point I desire to make, Doctor, in interrogating you, is that this organization composed of six to seven thousand people has never specifically passed on federal compulsory health insurance, nor has the board of twenty-six members, which is located, as you have indicated, in the South, passed specifically on federal compulsory health insurance; and it is you, one individual, even though you are the president, who is undertaking to express here the opinion of this great organization of six to seven thousand people, is that correct? Dr. Foreman: That is correct, but what I want to repeat is that I am fully authorized to do so.

. . . .

Senator Donnell: You have no present recollection of any affirmative action being passed by either the membership or the board, affirming their being in favor of compulsory health insurance, am I correct? Dr. Foreman: I think that you are correct.

Senator Donnell: Now, Doctor, you state in your statement here, in one place, quoting "We unequivocally endorse the President's National Health Program and S. 1606, the Wagner-Murray-Dingell National Health Bill, the main measure to carry it out." And yet, I understood you to testify that you have not studied all of this bill, is that correct? Dr. Foreman: I have studied the President's message.

Senator Donnell: But I am talking about S. 1606, which you denominate here as the main measure to carry out the President's National Health Program, and which measure you state that you "unequivocally endorse." Dr. Foreman: That is right.

Senator Donnell: Have you read all of that bill? Dr. Foreman: No, sir.

Senator Donnell: What portion of it have you read? Dr. Foreman: I am not able to give you the fractions, Senator, but I feel that I have gone through it sufficiently to understand its content and its meaning, and I am perfectly willing to take the President's own analysis of it as adequate.

. . . .

Senator Donnell: Now, Doctor, you refer on page 5 of your mimeographed statement, from which you have read, to what you call the "belated and extravagant claims of the American Medical Association"? Dr. Foreman: Yes, sir.

Senator Donnell: Have you ever attended a meeting of the American Medical Association? Dr. Foreman: I have discussed in great detail with a representative of the American Medical Association their belated and extravagant claims.

Senator Donnell: What do you mean by "belated"? Dr. Foreman: I mean by that, about ten years ago they claimed that voluntary medical assistance even was communistic and socialistic and inciting to revolution.

Senator Donnell: I am not clear as to what you mean by the term "belated." Dr. Foreman: I mean that it is only now that they are even coming to the point of advocating voluntary health insurance. Ten years ago they thought it was communism.

Senator Donnell: You know today the American Medical Association opposes very vigorously compulsory health insurance. Dr. Foreman: I know that they do just as vigorously as ten years ago they opposed voluntary methods.

Senator Donnell: And you also know that the American Medical Association is the largest single association of practicing physicians in the United States? Dr. Foreman: That is right, even monopolistic, I would call it.

Senator Donnell: Just what do you mean by that? Dr. Foreman: I mean in the District of Columbia they attempted to insist on their rights as a monopoly and to break up at that time, which was about ten years ago, a voluntary medical association here in the District of Columbia.

Senator Donnell: Now Doctor, you say on page 6 of your statement that doctors under this proposed bill, S. 1606, will not have to spend so much of their time and energy to collect bills. Do you regard this expenditure of time and energy which prevails under the present system in trying to collect bills as seriously impeding the efficiency of the physicians of this country? Dr. Foreman: I do. I think that the medical profession is torn now in a dilemma between being a profession and being a business. I think the reason that the American Medical Association is opposed to this is because too many of its members, or too many of the people who are controlling its policy, are thinking in terms of their business rather than their profession.

(Dr. Foreman stated his belief that the House of Delegates does not really represent the members of the American Medical Association; he questioned their motives; he gets his views from the Physicians' Forum.)

(Senator Donnell questioned Dr. Foreman closely as to his knowledge of the bill and as to his facts. It appeared Dr. Foreman did not know much beyond what had been prepared for him to read.—Ed.)

Senator Donnell: Did you personally prepare any part of this statement, Doctor? Dr. Foreman: I went over it, and it was brought to me in draft, and I went over it and changed it according to my ideas of what I wanted to say. I did not do it originally, the original work on it.

Senator Donnell: Does the document as it now stands and as you read it, in substance, in the major points at any rate, stand precisely as it was when it was brought to you? Dr. Foreman: In substance it stands as it was brought to me.

Senator Donnell: Now, Doctor, this is not said critically but merely as a matter of information. You realize, of course, that this is a highly important measure, and in fact you char- acterize it as the main measure to carry it out, and you have come before the United States Senate committee to give us the benefit of your views, and yet several weeks have elapsed since you have examined this document, S. 1606, and you are unable to state with any certainty where you derived the information as to the method of financing that was proposed. Am I correct in those statements? Dr. Foreman: You mean that I cannot now give you the reference for all of the figures here?

Senator Donnell: I am talking about the financing of the health insurance program, as to how that is to be done. Dr. Foreman: Well, I cannot now put my hands on it, no, sir. This 3 per cent is the figure that I have been going on, that I felt and I still feel that I can verify the fact that one half of it comes from the employer and one half from the employee.

Senator Donnell: I think that you will fail to find that in this title II. I may be in error in it, and if I am I stand corrected, but I do not think that you will find that. I think that you will find it in S. 1050. Dr. Foreman: It is possible that I and my assistant have been confused on that.

Senator Smith: Just one question, if I may. Doctor, what do you estimate would be the overall cost of the compulsory health program? Have you made estimates on that? Dr. Foreman: No, sir, I have not. I will be very glad to get up a figure.

Senator Smith: I have heard such strange figures, and I would like to know what the estimates are. It goes up as high as three or four billion dollars, and it is something that we ought to consider in relating it to our whole social program. Dr. Foreman: What I have heard, and I cannot myself vouch for, is that it would be less than, or I think the cost would be very little more, if any, in total than the billion that is now being paid for all medical and health work, but because it would be for everybody and would be prepaid, the total medical bill would be lowered. In other words, as I understand it, the theory, and as I say this is hearsay, Senator, and I am not prepared to give you the figures on it, was because we would have general coverage, with preventive care for all of the people, that the total medical bill of the country would be considerably lower than it is at the presnt time; and since it seems to me that we can think of it as a national problem, that would seem to me to answer the fundamental part of your question as to whether the country can afford health insurance.

Senator Smith: Then you suggest as the philosophy behind the bill that everybody should stop paying their doctors and go into this plan and get their health taken care of by the overall government program, that is your theory? Dr. Foreman: My theory is, if the bill is passed, that practically everybody will take advantage of the bill, including practically all of the doctors.

Senator Smith: So that the doctor would no longer have the personal relationship with the patient as to his fees and so on, and there would be no difference in skills as far as the patient is concerned? Dr. Foreman: I would say, because the doctor does not have to deal with his patients on the fees, there would be a more personal relationship with the patient. The doctor would be assured of his money and therefore would think of his patient only in a professional capacity.

Senator Smith: Well, would that apply to any professional job? You might say that the lawyers would not have any fees in a law case. Why not put them on the basis of a nice, pleasant relationship, where you just call your lawyer and the government pays him? I am trying to get the philosophy of this bill. Dr. Foreman: The Senator has given me caution, and I am not prepared to answer the legal question. But as far as the medical is concerned, I am absolutely convinced that the people would get better medical care under this bill, and that it would be of great benefit to the people in this country, particularly the Southern people.

Senator Donnell: Doctor, may I ask you, for a moment, do you know a lady named Peggy Stein? Dr. Foreman: Yes.

Senator Donnell: Connected with the Department of Agriculture? Dr. Foreman: I know her casually.

Senator Donnell: Is she here today at the hearing? Dr. Foreman: No, I do not think she is.

Senator Donnell: Did she participate at all in the preparation of this document from which you have testified? Dr. Foreman: So far as I know she did not.

(Senator Donnell questioned Dr. Foreman closely as to his unwarranted statement that doctors spend so much time and energy trying to collect their bills that they impair their efficiency.)

Senator Donnell: You know of doctors who have spent so much of their time and energy trying to collect bills that they have impaired their usefulness to a material extent? Dr. Foreman: I have known doctors who I thought impaired their therapeutic work, so to speak, because of their anxiety for the remuneration, for the patient's fees.

Senator Donnell: Would you mind telling us whether you know a considerable number of doctors who have devoted so much time and energy to the collection of bills that they have interfered with their efficiency? Dr. Foreman: I can only make the basis on the doctors I have known intimately, because doctors do not generally discuss this, and any casual discussion with a doctor would not bring out their anxiety about the collection of that bill.

Senator Donnell: Doctor, you do not mean to tell us that you have observed personally any considerable number of doctors that have been devoting such an amount of time and energy to the collection of bills as to interfere materially in your judgment with their efficiency? I am correct in that, am I not? Dr. Foreman: Senator, you pin me down to the point where I hesitate to answer. All I can say is that my best judgment and belief is that many doctors are sufficiently disturbed about the difficulties of collecting their fees that it does interfere with their medical activities. That I am prepared to stand by.

Senator Smith: Mr. Chairman, I would like to interrupt for the record to interpose an experience. Senator Donnell: Yes, sir.

Senator Smith: I assume I was raised from the atmosphere of the medical men. I think there is no greater profession than the profession of medicine. I think the witness would agree. Dr. Foreman: I would.

Senator Smith: I never knew of one in all my years ever concerned with the financial side of his practice. The way they are, they do not give enough attention to it. Senator Donnell: That has been my experience.

Senator Smith: Lots of them make personal sacrifices and pay no regard whatsoever to the question of collecting the fee. They were interested in the body and spirit of the patient. My father was like that. I would like to say, Senator, there may be a few exceptions, but the general experience of the medical profession has been so high that I am unwilling to have the statement made here and let it go unchallenged that doctors are thinking in terms of dollars and cents.

Senator Donnell: I would like to be recorded also as sharing your opinion, not from personal knowledge, because I have never been in a physician's family, but my experience has been that the medical profession has been extremely unjust to itself in that it has not given as much interest to collecting fees as it should have done. I think it is to be commended for that; and I would not share in the view that doctors have devoted so much time and energy to collecting their bills that they have impaired their efficiency. I want to say this in fairness to Dr. Foreman, that he does not say that in so many words. I want to read the sentence. He says "Doctors will not have to spend so much of their time and energy trying to collect bills, and we will not have to hold back on going to doctors because we cannot afford the cost." That is the statement he made, but I certainly do not concur in the view that I have ever known any doctor who I thought devoted so much time and energy going out collecting bills that he could not give attention to his patients.

Dr. Foreman: I think unquestionably some of the great philanthropists of the human race are in the medical profession, but I think also that doctors are human beings. I would like to give one instance in my own experience with the medical system of Atlanta, Ga., which has regular meetings—or did have at the time this happened. I am not sure whether the custom persists today. They excluded from these meetings all Negro doctors in Atlanta, Ga., and I, in my concern for the health of the people of Atlanta, including the Negro people, went before that body and appealed to them to allow the Negro doctors to sit in and hear their discussions once a month of current medical problems, so that the Negro doctors of the city of Atlanta would be able to keep abreast of medical information and carry that to their people. In doing so I did it with the encouragement and blessing of some of the finest doctors of Atlanta, I want to make that clear. All we were asking for at that time was that the Negro doctors be allowed it sit in and hear, so that they could keep current with the discussion; and that was turned down by this medical society, and as it was explained to me by the doctors in Atlanta, the reason for turning it down was that so many of the doctors there did not want the Negro doctors to keep abreast of the situation because they did not want to lose their clients, or patients, to the Negro doctors. Now, that seems to me to indicate that there are a number of the members of the medical profession very much concerned about collecting their bills.

(Senator Donnell again questioned Dr. Foreman closely as to what the bill would do for freedom of choice of physician.)

Senator Donnell: Is that not one of the important bases of the opposition of the American Medical Association, that they do not favor the federalization of control of the American government of patients and doctors; is that not one of the important bases of the opposition? Dr. Foreman: I do not think it is; no.

SENATOR DONNELL: You do not think it is. DR. FOREMAN: No. There is no federal control of the relation of doctor over patient in this bill.

SENATOR DONNELL: I think we might disagree on that, but I shall not go into this point with you.

SENATOR AIKEN: I was just wondering, Dr. Foreman, in the Southern conditions, what progress has been made in the South in improving health and providing medical care in the last few years? DR. FOREMAN: I think the greatest has been done through the supplemental work of the Farm Security Administration, Senator. And we have had a chance to get medical care on a much more basic plan than ever before, although even that is selective.

SENATOR AIKEN: You say the syphilis mortality is above the national average; and the tuberculosis, influenza and pneumonia rates are higher than elsewhere. How do the percentages of illness and death compare with what it was ten or twenty years ago? DR. FOREMAN: It is less, Senator, but it is still far higher than the rest of the country.

(To be continued)

Medical Legislation

STATE LEGISLATION

Massachusetts

Bill Passed.—S. 462 passed the senate April 11. Relating to the replacement of a city board of health by a city health department, it proposes that the commissioner of health shall be a citizen of the United States who has been graduated from a medical school approved by the state authority for the approval of medical schools and either shall be the holder of a degree of public health with at least two years' full time experience in a responsible position in public health service or shall have had four years' full time experience in a responsible position in such service. He shall be eligible to be registered to practice medicine under the laws of the state.

Bill Enacted.—H. 298 has become chapter 194 of the Laws of 1946. To amend the law relating to the practice of pharmacy, it authorizes the board and the commissioner of education to establish standards to be met by colleges of pharmacy, to grant certificates of approval to colleges meeting such standards and to revoke any certificate of approval previously issued to any college which lowers its standards below that established by the board and the commissioner.

Mississippi

Bills Enacted.—H. 699 was approved April 10. It authorizes the state board of examiners to proceed by injunction to prohibit any person from practicing any profession licensed under the supervision of said board when such person is not duly licensed so to practice, except persons practicing chiropractic, osteopathic or veterinary sciences. H. 1038 was approved April 4. Amending the law relating to the hospitalization of charity patients, it increases the amount payable for hospitalization and surgical care and provides that no hospital shall receive any funds provided for by this act unless such hospital shall have been inspected and approved by the state board of health.

Missouri

Bill Enacted.—S. 435 was approved April 12. Relating to the licensing of chiropractors, it transfers to the executive secretary of the division of registration and examination of the state department of education certain powers heretofore vested in the state board of chiropractic.

New Jersey

Bills Introduced.—A. 317 proposes the enactment of a cash sickness compensation act. A. 365 proposes the enactment of a nonoccupational accident and sickness benefit law.

Bills Passed.—S. 197 passed the house April 11. Relating to coroners' and county physicians' reports, it proposes that whenever an autopsy or chemical analysis is deemed necessary the county physician, or the coroner, shall cause a report of the findings of such autopsy, chemical analysis or other test to be filed with the county prosecutor's office, and such report shall be available for inspection to all officials, doctors or citizens having an established legitimate interest in the same. S. 278 passed the house April 11. To amend the law relating to medical service corporations, it proposes, according to a statement attached to the bill, "to enable veterans with service connected disabilities to choose their own personal physician and to be treated in local hospitals that have been designated by the Veterans Administration."

New York

Bills Enacted.—A. 1249 has become chapter 699 of the Laws of 1946. Amending the law relating to the practice of osteopathy, it provides that persons holding a license to practice osteopathy who have been granted the additional rights provided for under existing statutes and persons who shall meet all the preliminary and professional requirements required as of Sept. 1, 1936 and have satisfactorily passed or shall satisfactorily pass the regular medical licensing examination shall be granted the right to practice medicine without limitation as defined by the statutes of the state of New York. A. 1595 has become chapter 712 of the Laws of 1946. It provides for the creation of a medical director in the county of Erie who shall be a duly qualified practitioner of medicine and surgery, a graduate of a medical school, and have had at least five years' actual experience in the practice of his profession. He is to take over the duties now vested in the medical examiner. A. 1973 has become chapter 674 of the Laws of 1946. It amends the state licensing law by providing that persons lawfully inducted into the military service who were licentiates under the state law at the time of their induction may apply for, and be entitled to, a renewal of their license within three months of discharge from the service or within three months of discharge from any period of hospitalization in a facility maintained by the United States Veterans Administration. This is without examination, reexamination, fine or penalty. A. 2377 has become chapter 675 of the Laws of 1946. It authorizes corporations organized under the consumers' cooperative stock corporation law for the purpose of furnishing medical expense indemnity service to persons who become subscribers under contracts with such corporation to reincorporate under the membership corporations law. A. 2739 has become chapter 666 of the Laws of 1946. It authorizes the state department of taxation and finance to receive from the federal government any moneys which the federal government shall offer to the state to assist to inventory its hospitals, to survey the need for construction of hospitals, to develop a program for construction of public and other nonprofit hospitals and to construct such hospitals in accordance with such program, and generally for all the purposes for which any such moneys shall be offered pursuant to any federal law. The term "hospitals" includes public health centers and related facilities. S. 1319 has become chapter 597 of the Laws of 1946. It amends the law relating to hypnotic and somnifacient drugs by prohibiting prescriptions therefor from being refilled if the prescription bears a direction to that effect and authorizes the prescribers to indicate the number of times a prescription may be refilled. If the prescription is silent as to refilling, then the prescription may be refilled by the pharmacist during a period of not more than six months from the original date of the prescription. A pharmacist is prohibited from furnishing a copy of the prescription to the patient. S. 1542 has become chapter 698 of the Laws of 1946. It amends the education law by providing a number of amendments relating to the practice of pharmacy. S. 1563 has become chapter 697 of the Laws of 1946. It provides for the creation of a board of examiners in ophthalmic dispensing.

Rhode Island

Bill Passed.—H. 771 passed the house April 12. It proposes an appropriation to the state department of health to carry on an experimental dental research study in administrative practice in conjunction with the United States Public Health Service

South Carolina

Bill Enacted.—H. 1446 was adopted March 30 It resolves that the officials of the schools in Anderson County be requested to accept certificates signed by chiropractors as well as by medical doctors as to disability preventing pupils from attending school.

National Health Program

PLATFORM ADOPTED BY THE AMERICAN MEDICAL ASSOCIATION

One of the ten points in this platform will be published each week.

3. The procedures established by modern medicine for advice to the prospective mother and for adequate care in childbirth should be made available to all at a price that they can afford to pay. When local funds are lacking for the care of those unable to pay, federal aid should be supplied with the funds administered through local or state agencies.

Official Notes

"DOCTORS AT HOME" TIME CHANGED

With the beginning of Daylight Saving Time in various parts of the United States as of the last Sunday in April, the broadcast time of "Doctors at Home" will be changed. Beginning May 4 "Doctors at Home" will be heard on the NBC network from 4:30 to 5 p. m., Eastern Daylight Saving Time (3:30 to 4 Central Daylight Saving Time, 2:30 to 3 Mountain Daylight Saving Time, 1:30 to 2 Pacific Daylight Saving Time). Wherever Standard Time is observed, the program will be one hour earlier.

Following are the programs scheduled for the remainder of the series:

April 27.	Tuberculosis.
May 4.	Child behavior.
May 11.	Mushroom poisoning.
May 18.	Highway safety.
May 25.	Trichinosis.
June 1.	Health education.
June 8.	Medicine in the future.

These programs will be summarized alternately by Drs. W. W. Bauer and William W. Bolton, respectively Director and Assistant Director of the Bureau of Health Education.

Washington Letter

(From a Special Correspondent)

April 22, 1946.

Veterans Administration Appoints Psychiatrists

Dr. James G. Miller, the 29 year old psychiatrist who helped develop new technics for selecting undercover agents for the Office of Strategic Services, has been named chief of the division of clinical psychology in the Veterans Administration. Dr. Rutherford B. Stevens, aged 39, first Negro doctor appointed to the staff of a Veterans Administration Hospital not exclusively for Negro veterans, was appointed resident psychiatrist at the Winter General Hospital, Topeka, Kan., on approval of Dr. Karl Menninger, who is directing the agency's neuropsychiatric activities. A recommendation for Stevens was also made by Brig. Gen. William Menninger, brother of Karl and chief of the army psychiatric division. The Veterans Administration also reports that it is setting up sixteen artificial eye laboratories to serve approximately 89,000 blinded veterans.

Opposition to Deferments for Fathers of Illegitimate Children

Representative Cooley, Democrat of North Carolina, asked the House to eliminate from draft extension legislation provisions that would "give expectant fathers of illegitimate children" a deferment from the draft. A section exempts any one who has a child, and a child is described as "a legitimate or illegitimate child from the date of its conception." Representative Cooley declared "The draft board then becomes a bastardy court . . . the next thing you know you'll be giving these fellows a Distinguished Service Cross." Incidentally, legislation was introduced in the House by Representative Beall, Republican of Maryland, to protect illegitimate children adopted by people outside the District of Columbia. The bill provides for a new birth record in the new name to be issued.

Bill Would Give Amputees New Automobile

Representative Rogers, Republican of Massachusetts, has introduced a bill in the House which would grant to any veteran who has lost a limb or the use of a limb through service incurred injuries a $1,500 automobile or an equal cash payment. The measure was drawn up in cooperation with the Veterans Administration. It provides that the grant shall be made by the agency when the automobile "would enable the veteran to engage in gainful employment notwithstanding such disability." Representative Kelley, Democrat of Pennsylvania, said he would introduce a similar measure.

Meeting of State and Territorial Health Officers

The Association of State and Territorial Health Officers met in Washington, with sessions in various hotels. Deputy Surg. Gen. Warren F. Draper of the U. S. Public Health Service opened the conference with an appeal for passage of public health bills pending in Congress. He spoke in behalf of Surg. Gen. Thomas Parran, who is in Paris arranging for the international health organization conference in June. Dr. James A. Hayne, who was South Carolina health officer thirty years before retiring, presented an honorary life membership to Dr. F. W. Cogswell, Montana state health officer for thirty-three years.

President Proclaims Child Health Day May 1

Proclaiming May 1 as Child Health Day, President Truman has urged the American people to seek improved health conditions for children. He said "I call on the people in each of our communities to pledge themselves to review their community health and medical care services to see how well these services meet the needs of our children in the light of the goals of the national health program and to organize a definite plan to achieve within the coming year at least one improvement in community health services which will contribute to the better health of children."

Miners and Operators Stymied on Lewis Health Proposals

United Mine Workers President John L. Lewis states that a demanded health and welfare fund for miners must be provided by operators on a tonnage basis if the present soft coal mine contract deadlock is to be broken. Coal production has been stymied for some time, with neither side indicating that it would yield. Operators claim a 10 cent a ton assessment on coal mined for a health and welfare fund would add $200,000,000 annually to the coal bill of the United States.

Drive on Prostitution as Army Venereal Rate Rises

Informed of the first sharp rise in the venereal disease rate of the army since 1902, Chief of Staff Dwight D. Eisenhower has endorsed the continuous military drive against vice conditions. He has ordered all commanders in this country and overseas to declare all identified houses of prostitution "off limits." A spokesman said that the all time low rate of 28 cases of infection per thousand men in 1943 had risen to 69 cases per thousand men last year and is still mounting.

Lack of Personnel Blamed for Fifty or More Infant Deaths

The District of Columbia Commissioners charge, in a report to Capitol Hill asking the Senate to restore an appropriation to employ additional nurses, that "inadequate care" was responsible for more than a third of the 146 deaths of babies in Gallinger Municipal Hospital. The report revealed that babies born at Gallinger between 11 p. m. and 7 a. m. are cared for only by "untrained domestic attendants."

Increase in Production of Penicillin

The Civilian Production Administration estimates that production of penicillin is now about 300 per cent that of last December, with more penicillin now being available for export to meet pressing needs overseas. Although production of streptomycin, new companion drug to penicillin, is still too low to meet military needs, 32 per cent of the supply has been allocated this month for civilian and research purposes

Simple Test for Diagnosis of Spotted Fever

Comdr. Norman H. Topping, senior surgeon of the U. S Public Health Service, told the George Washington University Medical Society that the long sought test to diagnose Rocky Mountain spotted fever accurately may have been found He has asked District of Columbia doctors to bring in suspected cases to the service for testing. Commander Topping said that the former test for fever took so long that before it was completed the patient was either well or dead. He says there is a possibility that the newly discovered laboratory process may offer a quick and accurate diagnosis. The best preventive of the fever is said to be the old fashioned immediate examination of adults and children after they come in from infected areas. Instances of the fever have been reported this year in all forty-eight states Dr. James G Cummings, director of the communicable disease bureau of the District of Columbia, reports that any patient suddenly afflicted with "a splitting headache, rising temperature and rash on the hands and ankles" is a potential spotted fever case

Use of Hospital Ship for Venereal Disease Clinic

A 300 bed hospital ship, turned over to the United States Public Health Service at Norfolk, may be anchored at Washington for use as a venereal disease clinic for patients from the District of Columbia, Maryland and Virginia. Public health officials propose that the ship be used for the twelve day penicillin treatment. Among those attending the ceremonies when the Army turned over the ship to the Public Health Service were Dr. I. C. Riggin, Virginia health commissioner; Representative McMillan, Democrat of South Carolina; Dr. John R Heller, assistant surgeon general and director of the Venereal Disease Division of the Public Health Service; Dr. R H. Reilly, Maryland state health commissioner, Dr. Ross Taggart, District of Columbia venereal disease director, and Dr George Ruhland, District of Columbia health officer.

Use of Streptomycin in Treating Bubonic Plague

Dr. J. W. Hornibrook of the U. S. Public Health Service reports successful use of streptomycin in animal experiments for the treatment of bubonic plague. The drug is not yet in commercial production. It can be obtained for civilians only through Dr. Chester S. Keefer of the Evans Memorial Hospital of Boston, member of the National Research Council, who had control of all commercial use of penicillin up to the end of the war. The Civilian Production Administration and the War Department reveal that a $20,000,000 plant construction program is scheduled to provide an ample supply of streptomycin With special priorities one commercial plant will be in production next month and several others will be operating before the end of the year.

Advocacy of Extension of Mental Hygiene

Dr. Winfred Overholser, superintendent of St Elizabeths Hospital and professor of psychiatry at George Washington University School of Medicine, told the American Philosophical Society in Philadelphia that "fully half of the hospital beds of the United States are in mental hospitals." He advocated extension of the principles of mental hygiene to the schools and industry, expansion of facilities for the early extramural attention to mental symptoms, development of psychiatric wards in general hospitals and continuing and expanding research into the problems of mental disorder.

Increased Production of Penicillin

Dr. Donald Grove, assistant chief of the division of penicillin control and immunology, Food and Drug Administration, reports that there is a vastly increased supply of penicillin now available. Some doctors complain that commercial manufacture has reduced the quality. Dr. Grove said that tests are being made to determine whether the present penicillin K is as effective as types G, F and X.

Coming Medical Meetings

American Association for the Study of Goiter, Chicago, June 20 23 Dr. Thomas C. Davison, 478 Peachtree St, N E, Atlanta 3, Ga, Secretary

American Association for Thoracic Surgery, Detroit, May 29 31. Dr. Richard H. Meade Jr, Kennedy General Hospital, Memphis 15, Tenn, Secretary.

American Association of Genito Urinary Surgeons, Stockbridge, Mass, June 20 22 Dr Charles C. Higgins, 2020 E 93d St, Cleveland 6, Secretary

American Association of Plastic Surgeons, Toronto, Canada, June 3 4. Dr Frederick A. Figi, 102 Second Ave, S W., Rochester, Minn, Secretary

American Association of the History of Medicine, Atlantic City, May 26 27. Mr. W. B McDaniel II, 19 S. 22d St, Philadelphia 3, Secretary.

American Broncho Esophagological Association, Chicago, May 31. Dr. Paul H. Holinger, 700 N Michigan Ave, Chicago 11, Secretary.

American College of Physicians, Philadelphia, May 13 17. Mr. E R. Loveland, 4200 Pine St, Philadelphia 4, Executive Secretary.

American Dermatological Association, Hot Springs, Va, June 10 14. Dr Harry R. Foerster, 208 E Wisconsin Ave, Milwaukee, Secretary.

American Federation for Clinical Research, Atlantic City, May 28 Dr. Richard H. Lyons, University Hospital, Ann Arbor, Mich, Secretary.

American Gastro Enterological Association, Atlantic City, May 24 25. Dr J. Arnold Bargen, 102 Second Ave, S W, Rochester, Minn, Secretary

American Laryngological Association, Chicago, May 29 30 Dr. Arthur W. Proetz, 3720 Washington Blvd, St Louis 8, Secretary.

American Laryngological, Rhinological and Otological Society, Chicago, May 27 28 Dr. C Stewart Nash, 277 Alexander St, Rochester 7, New York, Secretary.

American Otological Society, Chicago, May 31 June 1. Dr. Gordon D. Hoople, 713 E. Genesee St, Syracuse, N. Y., Secretary.

American Pediatric Society, Skytop, Pa, May 1 3. Dr. Hugh McCulloch, 325 N. Euclid Ave, St. Louis 8, Secretary.

American Psychiatric Association, Chicago, May 27 30 Dr. Winfred Overholser, St Elizabeth's Hospital, Washington 20, D C, Secretary.

American Society for Clinical Investigation, Atlantic City, May 27, Dr Eugene A Stead Jr, Grady Hospital, Atlanta 3, Ga, Secretary.

American Society for Research in Psychosomatic Problems, New York, May 11 12. Dr. Edwin G Zabriskie, 714 Madison Ave, New York 21, Secretary.

American Therapeutic Society, Atlantic City, May 11 12 Dr. Oscar B. Hunter, 1835 I St, N.W, Washington, D C, Secretary.

Arizona State Medical Association, Phoenix, May 2 3 Dr. Frank J. Milloy, 112 N. Central Ave, Phoenix, Secretary.

Association of American Physicians, Atlantic City, May 28 29. Dr. Joseph T. Wearn, 2065 Adelbert Road, Cleveland 6, Secretary

California Medical Association, Los Angeles, May 7-10 Dr. George H. Kress, 450 Sutter St, San Francisco 8, Secretary.

Connecticut State Medical Society, Hartford, May 1 3. Dr. Creighton Barker, 258 Church St., New Haven 10, Secretary.

Georgia, Medical Association of, Macon, May 7 10. Dr. Edgar D. Shanks, 478 Peachtree St, N.E, Atlanta, Secretary.

Illinois State Medical Society, Chicago, May 14 16. Dr. Harold M. Camp, 224 S. Main St, Monmouth, Secretary.

Louisiana State Medical Society, Alexandria, May 6 8. Dr. P. T. Talbot, 1430 Tulane Ave., New Orleans 13, Secretary.

Massachusetts Medical Society, Boston, May 21 23. Dr. Michael A Tighe, 8 Fenway, Boston, Secretary.

Minnesota State Medical Association, St. Paul, May 20 22. Dr. B. B Souster, Lowry Medical Arts Bldg, St. Paul 2, Secretary.

Mississippi State Medical Association, Jackson, May 14 15. Dr. T. M Dye, Box 295, Clarksdale, Secretary.

National Tuberculosis Association, Buffalo, N Y, June 11 13. Dr. Charles J. Hatfield, 1790 Broadway, New York 19, Secretary.

Nebraska State Medical Association, Lincoln, May 6 9 Dr. R. B Adams, 416 Federal Securities Bldg., Lincoln 8, Secretary.

New Hampshire Medical Society, Manchester, May 14. Dr. C. R Metcalf, 5 S State St, Concord, Secretary.

New Jersey, Medical Society of, Atlantic City, May 21 23. Dr. Alfred Stahl, 55 Lincoln Park, Newark, Secretary.

New York, Medical Society of the State of, New York, April 29 May 3 Dr. Walter P Anderton, 292 Madison Ave, New York 17, Secretary

North Carolina, Medical Society of the State of, Pinehurst, May 1 3 Dr. Roscoe D. McMillan, P. O. Box 232, Red Springs, Secretary.

North Dakota State Medical Association, Bismarck, May 26-28. Dr L. W Larson, 221 Fifth St, Bismarck, Secretary

Ohio State Medical Association, Columbus, May 7 9 Mr Charles S Nelson, 79 E. State St, Columbus, Executive Secretary

Oklahoma State Medical Association, Oklahoma City, May 1 3 Dr Lewis J. Moorman, 210 Plaza Court Bldg, Oklahoma City, Secretary

Rhode Island Medical Society, Providence, May 15 16 Dr William P. Buffum, 122 Waterman St, Providence 6, Secretary

Society of American Bacteriologists, Detroit May 21 24 Dr Leland W. Parr, 1335 H St, N. W, Washington 5, D. C, Secretary.

South Carolina Medical Association, Myrtle Beach, April 30 May 2. Dr. Julian P. Price, 105 W. Cheves St, Florence, Secretary.

South Dakota State Medical Association, Aberdeen, June 1 4 Dr Roland G Mayer, 22½ S Main St., Aberdeen, Secretary

Texas, State Medical Association of, Galveston, May 6 9 Dr. Holman Taylor, 1404 W. El Paso St, Fort Worth 3, Secretary.

West Virginia Medical Association, Huntington, May 13 15 Mr. Charles Lively, P. O. Box 1031, Charleston 24, Executive Secretary.

Medical News

(PHYSICIANS WILL CONFER A FAVOR BY SENDING FOR THIS DEPARTMENT ITEMS OF NEWS OF MORE OR LESS GENERAL INTEREST: SUCH AS RELATE TO SOCIETY ACTIVITIES, NEW HOSPITALS, EDUCATION AND PUBLIC HEALTH.)

ALABAMA

Wilmot Littlejohn Named Neurology Head.—Dr. Wilmot S. Littlejohn, Birmingham, has been named head of the newly created department of neurology in the division of medicine at the Medical College of Alabama, Birmingham, according to the Birmingham *News*. Dr. Littlejohn will also be associate professor of clinical medicine for neurology. He graduated at Emory University School of Medicine, Atlanta, in 1921.

CALIFORNIA

Ninety Years of Age.—Dr. Flora M. Watson-Reeves, Los Angeles, who graduated at Hering Medical College, Chicago, in 1893, recently observed her ninetieth birthday.

Dr. Götzl Dies.—Dr. Alfred Götzl, who has been living in San Francisco for some years, died there January 21. He was a former head of the tuberculosis division of the city of Vienna, Austria.

State Board Agent Resigns.—Walter N. Anderson, chief special agent for the California State Board of Medical Examiners, has resigned to enter private law practice, it was announced February 11. He will be succeeded by Maynard C. Youngs.

Personal.—The Los Angeles Surgical Society was addressed March 8 by Dr. Frank H. Lahey, Boston, on "Some of the New Developments in Thyroid Disease, Including Thiouracil and Thiobarbital." He was awarded honorary membership in the society.——Dr. Harry E. Zaiser, Orange, has resigned as superintendent of the Orange County Hospital after holding the position for thirty-one years.

New Tuberculosis Secretary.—Mr. Patrick Kelley, who recently returned from the Pacific area, where he served for four years as a lieutenant commander in the U. S. Navy, has been appointed executive secretary of the San Francisco Tuberculosis Association to succeed Mr. Paul Neiman, who resigned in March. Prior to enlistment Mr. Kelley was public relations director of the San Francisco Community Chest.

The Pierson Research Fund.—The Alum Rock Sanatorium, San Jose, has received a gift of $5,000 for medical research to be known as the Philip H. Pierson Memorial Research Fund. Dr. Pierson, clinical professor of medicine, Stanford University School of Medicine, San Francisco, died January 17. He was consultant to the sanatorium. The fund has been set up as a "dedication to Dr. Pierson's unselfish devotion and scientific attainments in the field of medicine, particularly diseases of the chest," according to the *Bulletin* of the San Francisco County Medical Society.

Department of Neurology Created.—Dr. Charles D. Aring, Cincinnati, April 1, assumed the position of professor of neurology at the University of California Medical School, San Francisco, and the chairmanship of the newly created department of neurology for the university. The department of neurology will be housed eventually in the new development on the San Francisco campus, where beds, laboratories and offices will be located convenient to those of the other services. It is planned that neurology will be integrated with related disciplines rather than isolated in the style of a neulorogic unit. Dr. Ephraim Roseman, formerly instructor in neurology at the University of Cincinnati College of Medicine and at present a major in the U. S. Army Medical Corps in charge of neuropsychiatry at the 317th Station Hospital in Wiesbaden, Germany, will join the department at the University of California Medical School as assistant professor of neurology at the termination of his military service.

CONNECTICUT

Portrait of Robert Yerkes.—During a reception in honor of Robert M. Yerkes, Ph.D., professor emeritus of psychobiology at Yale University School of Medicine, New Haven, in the Sterling Hall of Medicine, April 4, a portrait, the work of Clarence Brodeur, was presented to the university. Dr. Yerkes, who had been a member of the staff of Yale since 1924, recently became emeritus professor. He has been chairman of the committee on research of problems of sex, National Research Council, since 1922.

GEORGIA

State Medical Meeting.—The Medical Association of Georgia will hold its 1946 meeting in the City Auditorium, Macon, May 7-10, under the presidency of Dr. Cleveland Thompson Millen, who will speak on "The Doctor in This New Day." The Bibb County Medical Society will act as host. Among the speakers will be:

Dr. Oswald S. Lowsley, New York, Correcting Some of Nature's Mistakes by Surgical Intervention.
Dr. Harrison H. Shoulders, Nashville, Our Battle for Freedom.
Dr. Jean P. Pratt, Detroit, Psychosomatic Gynecology.
Dr. Marcas Fernan-Nunez, Milledgeville, Tropical Diseases in the African Negro.

The Abner Wellborn Calhoun Lecture will be delivered Wednesday by Dr. Winchell M. Craig, Rochester, Minn., on "The Early Diagnosis of Neurosurgical Conditions."

ILLINOIS

Chicago

Harold Lueth Goes to Nebraska.—Dr. Harold C. Lueth, associate professor of medicine, University of Illinois College of Medicine and formerly liaison officer between the Surgeon General's Office, U. S. Army, and the American Medical Association, has been appointed dean of the University of Nebraska College of Medicine, Omaha, and superintendent of the University of Nebraska Hospital. Dr. Lueth graduated at Northwestern University Medical School in 1930.

Training in Neuropsychiatry and Allied Fields.—The Illinois State Department of Public Welfare announces a course of training in psychiatry and allied fields to fulfil the requirements of the American Psychiatric Association and to prepare the resident for the examination to become certified by the American Board of Psychiatry and Neurology. The regular positions in the state hospitals will be filled from the graduates of this course whenever possible. Opportunities include in the first year nine months' state hospital service and three months' resident service at the Illinois Neuropsychiatric Institute. While in the state hospital service the resident will work for at least three months each on the male and female receiving service under a competent psychiatrist. In the second year the resident will have nine months in state service and three months outside of state hospital service which will be spent at the Veterans' Rehabilitation Center, at the Psychopathic Hospital of Cook County, at a private hospital, at the Juvenile Court, at the Behavior Clinic of the Criminal Court or at the Municipal Psychiatric Institute. While at the state hospital the resident will be in charge of a service for the chronically afflicted under a competent psychiatrist. The didactic course offered in the first year will continue during this time. In the third year the resident will serve as physician one on the regular staff of a state hospital, taking care of the patients as the state hospital management may deem advisable. At the end of nine months he may be eligible for a special course in any of the institutions mentioned of his own choice. It is understood that any resident who enters training under this plan is to be accepted by a committee. This committee will probably consist of a representative from the state alienist's office, one from the central office of the department of public welfare and one member from the state hospital service. The representative from the alienist's office will also act as liaison officer between the department of public welfare and the various universities participating in the program. Preference will be shown to veterans of World War II. The salary for the first year will range from $150 to $200 a month, the second year $185 to $245 and the third year $310 to $360. Applicants should send their requests to Dr. Harry R. Hoffman, state alienist, Illinois Neuropsychiatric Institute, 912 South Wood Street, Chicago. The residencies start July 1.

KENTUCKY

Governor Vetoes Medical Scholarship Bill.—Governor Simeon S. Willis on March 26 vetoed a measure that would establish a revolving fund for scholarships to help prospective rural doctors through medical school and is reported to have said that although the rural medical care needs were great "we cannot at public expense violate the constitution." The bill would set up a $750,000 fund for loans to medical students in return for a given period of practice in rural areas. The governor is reported to have said that he could not sign the bill because the constitution forbids grants of money to persons prior to their performing a public service. The bill was the outgrowth of a plan inaugurated by the Kentucky State Medical Association (THE JOURNAL, January 19, p. 162). The program will continue, according to newspaper reports, since the *project* has already been launched (The Journal, March 23, p 804) The board of the state medical group administering the fund now has about $12,000, nearly all of which has come from doctors It is estimated that from $30,000 to $40,000 is needed

LOUISIANA

State Medical Meeting.—The Louisiana State Medical Society will hold its 1946 session at the Hotel Bentley, Alexandria, May 6-8, under the presidency of Dr Valentine H Fuchs, New Orleans Dr Bayard T Horton, Rochester, Minn, the guest speaker, will discuss "Headache" At an open meeting Monday evening Mr Jay Ketchum, director of the Division of Prepayment Medical Care Plans, American Medical Association, will discuss "Better Health the American Way" Included among other speakers will be

Dr Ralph V Platou, New Orleans Chronic Cough in Children
Dr James W McLaurin, Baton Rouge The Lempert Endoral Fenestration Operation for Clinical Otosclerosis
Dr Francis W Raggio Jr, Lake Charles, The Management of Common Eye Injuries in the General Practitioner's Office
Dr Murrel H Kaplan, New Orleans Calcareous Pancreatic Disease
Dr Charles E Dunlap, New Orleans, The Use of Biopsies in the Diagnosis of Tumors
Dr Calvin M Johnson, New Orleans, Essential Factors in Preoperative, Operative and Postoperative Care in Gynecologic Patients
Dr Henry R Kahle, New Orleans, Acute Craniocerebral Injury
Dr Lucien A Fortier, New Orleans, Intravenous Pyelography as an Aid in Diagnosis
Dr Jesse R Stamper, Shreveport, Plastic Operations for Urethral Strictures
Drs John Adriani and Ray T Parmley, both of New Orleans, Saddle Spinal Anesthesia in Obstetrics
Dr Charles B Odom, New Orleans, Civilian Application of Battle Casualty Experiences
Dr William A Sodeman New Orleans, Disease and the Aged
Drs Joe E and Alice E B Holoubek, both of Shreveport, A Study of Heart Disease in the South
Dr Lyon K Loomis, New Orleans, Some Common Errors in Fracture Treatment
Dr Charles S Holbrook, New Orleans, Five Years' Experience with Electric Sleep (Electric Shock) Treatment

The Louisiana Tuberculosis Association will devote its program at the Hotel Bentley, Alexandria, May 5, to a symposium on reconversion for tuberculosis control

MICHIGAN

The Hickey Lecture—Dr Albert C Furstenberg, dean, University of Michigan Medical School, Ann Arbor, gave the tenth Hickey Memorial Lecture before the Wayne County Medical Society, April 1 His subject was "The Management of Impaired Hearing in the General Practice of Medicine"

Physicians Resign in Protest to Welfare Board Appointment—On March 18 the Detroit *Times* reported that four physicians had resigned from the staff of City of Detroit Receiving Hospital (Redford Branch) in protest against the reappointment of James E Frazer to the city welfare commission The physicians were Drs Arthur G Liddicoat, Louis J Gariepy, Samuel A Flaherty and Willard A Chipman, all of Detroit The newspaper reports indicated that a citizens committee had been appointed by Mayor Jeffries to investigate the administration and operation of the hospital and to determine the merits of controversies between Mr Frazer and members of the staff of the hospital

The State's Oldest Physician—Dr Homer Pease Mix, Riverside, 94 years of age, is Michigan's oldest physician He once taught in rural schools In 1880 Dr Mix graduated at Hahnemann Medical School and Hospital, Chicago He served an internship at Cook County Hospital and was licensed to practice in Illinois but shortly thereafter took over the practice of a deceased physician in Highland, Iowa County, Wis, where he later served as county physician In 1908 Dr Mix moved his family to Benton Harbor In 1912 they went to Riverside, where the physician remained in active practice until 1945 The St Joseph *Herald*, Oct 12, 1931, stated that forty years of Dr Mix's career had been spent as a health officer both in Wisconsin and in Michigan

NEW JERSEY

Mabel Lesher Joins Social Hygiene Association—Dr Mabel Grier-Lesher, Camden, since 1927 medical inspector of the Camden public schools and a member of the faculty of Rutgers University School of Education, has been appointed educational consultant for field work for the American Social Hygiene Association Dr Lesher, who graduated at Johns Hopkins University School of Medicine, Baltimore, in 1905, has been chairman of the advisory committee of social hygiene education of the New Jersey State Department of Public Instruction and also social hygiene chairman of the New Jersey Congress of Parents and Teachers

NEW YORK

Graduate Lectures—Dr George E Anderson, Brooklyn, will address the Cortland County Medical Society, May 17, on "Diabetes Mellitus" Dr Arnold Z Pfeffer, New York City, will address the Oswego County Medical Society, May 8, at the Fulton Club, Fulton, on "Neuropsychiatric Aspects of Arteriosclerosis and Aging"

Charles Shields Named Commissioner of Health—Col Charles D Shields, who recently returned from four years' service overseas, part of which was holding the position of chief public health officer in Bavaria, has been appointed commissioner of health of Buffalo He will succeed Dr Francis E Fronczak, who is retiring after thirty-six years of service as commissioner of health of Buffalo Dr Fronczak plans to join the UNRRA in Poland as a medical lecturer and organizer of public health service Dr Shields graduated at the Georgetown University School of Medicine, Washington, and Harvard University School of Public Health, Boston

One Hundred Years of Medicine at Buffalo—On April 12-13 the University of Buffalo School of Medicine observed the one hundredth anniversary of its founding Centennial exercises were held at the Hotel Statler, Buffalo, and included the following speakers.

Dr Mitchell I Rubin, Buffalo, Diseases of the Kidney Newer Concepts, Including Treatment
Dr Lester R Dragstedt, Chicago, Recent Developments in the Treatment of Peptic Ulcer
Dr Joseph Stokes Jr, Philadelphia, Infectious Hepatitis Etiology Prophylaxis and Treatment
Dr Edward F Hartung, New York City Newer Developments in the Treatment of Arthritis and Rheumatic Diseases
Dr Edward M Bridge, Buffalo, The Management of the Epileptic Patient
Dr Carl E Arbesman, Buffalo, An Evaluation of New Drugs Used in the Treatment of Hay Fever, Asthma and Urticaria
Dr Samuel Proger, Boston, The Management of Anoxia New Clinical Approach
Dr Chester S Keefer, Boston, Penicillin and Streptomycin
Dr John E. Howard, Baltimore, The Management of the Convalescent Patient
Dr James F Norton, Jersey City, N J, Factors Influencing Maternal Risk

At a banquet, Dr Morris Fishbein, Chicago, Editor of The Journal, spoke on "American Medicine and the Health Program" In addition to addressing the centennial banquet, Dr Fishbein gave a fifteen minute broadcast over WBEN on "Medicine in the Postwar World"

New York City

Otto Loewi Becomes Citizen—Dr Otto Loewi, winner of the Nobel Prize for medicine and physiology in 1936, became a United States citizen April 1 Dr Loewi is research professor of pharmacology at the New York University College of Medicine

First Appeal for Funds in Ninety-One Years—The Woman's Hospital on April 1 opened a campaign for $100,000, its first public appeal for funds in ninety-one years The hospital was established in 1855 under the direction of Dr J Marion Sims

Counsel Named to Help with Office Space—Joseph Platzker, former commissioner of the department of housing and buildings, has been appointed real estate counsel to the veterans service sponsored by the Medical Society of the County of New York Mr Platzker will assist members of the society who are returning from the armed forces in finding office space and residences

Clinic for Fire Department.—It is planned to establish an outpatient clinic for members of the New York Fire Department and their families, $125,000 has been pledged by the department's honor emergency fund and is said to be the first appropriation of this kind in the fund's history The clinic will be at Engine Company 30 at 278 Spring Street The third floor of the fire house will be rearranged so that the equipment including x-ray machines, a cardiograph, physical therapy and diathermy devices and a dental office will be set up with soundproof walls and ceilings, casement windows and air conditioning

Dr. Enloe Named Medical Director.—Dr Corter F Enloe Jr, who was recently released from military service, has become a partner in Murray Breese Associates, Inc, and has been appointed vice president and medical director of the agency During his last year of service Dr Enloe completed a mission for the Secretary of War as chief of the medical branch of the U S Strategic Bombing Survey His report on "The Effect of Bombing on Health and Medical Care in Germany" was characterized by Secretary of War Robert P Patterson as "vital in the planning for the defence of the health of this country"

Medallion Goes to Nathaniel Rathbun.—In tribute to his forty-eight years in medicine and his contributions in the field of urology, Dr. Nathaniel P. Rathbun was presented with the second alumni medallion for distinguished service to American medicine during the eighty-eighth commencement exercises at the Long Island College of Medicine, Brooklyn, at the Brooklyn Academy of Music, March 28. Dr. Rathbun graduated at Long Island College of Medicine in 1898. He was valedictorian of his class. He has been associated with the Brooklyn Hospital since 1898, first as intern, resigning as head of the urologic service June 1, 1946 but continuing as consulting urologist. The first alumni medallion for distinguished service to medicine was presented in 1944 to Dr. Robert L. Dickinson, gynecologist, who graduated in 1882.

OHIO

Course in Pediatrics and Obstetrics.—A refresher course in pediatrics and obstetrics will be given April 29-May 1 in Cleveland under the sponsorship of the Academy of Medicine of Cleveland, Western Reserve University School of Medicine, Cleveland, and the Cleveland division of health with the cooperation of the Anti-Tuberculosis League and the Cleveland Child Health Association. Among the speakers will be:

Dr. C. Anderson Aldrich, Rochester, Minn., Observations on Normal Behavior in Infants.
Dr. Donovan J. McCune, New York, Recognition and Treatment of Mental Defectiveness in Infants and Children.
Dr. James L. Wilson, Ann Arbor, Treatment of Acute Respiratory Diseases in Infants and Children.
Dr. Henry J. Gerstenberger, Cleveland, Vitamin Needs in Infancy.
Dr. Bruno Gebhard, Cleveland, Who Is Your Doctor?
Dr. Charles F. McKhann, Cleveland, Vomiting and Diarrhea in Infants.
Dr. Walter Heymann, Cleveland, Renal Disorders in Infants and Children.
Dr. Norman F. Miller, Ann Arbor, Should Mothers Nurse Their Babies?
Dr. John A. Toomey, Cleveland, Diagnosis and Treatment of Meningeal Irritation in Children.
Dr. Nicholson J. Eastman, Baltimore, A Review of Two Hundred Consultations in Private Obstetric Practice.
Dr. Borden S. Veeder, St. Louis, The Pediatrician Looks at Child Psychiatry.
Thomas Hill, D.D.S., Cleveland, Dental Health in Children.
Dr. Arthur J. Horesh, Cleveland, Allergy in Childhood.
Dr. John W. Holloway, Cleveland, The Management of Surgical Conditions in Infancy and Childhood.
Dr. Chauncey W. Wyckoff, Cleveland, Advances in Infant Feeding.
Miss Josephine Walker, Cleveland, A Concord of Sweet Sounds.

PENNSYLVANIA

Clinics for Crippled Children.—Thirty-seven diagnostic clinics for crippled children will be held in Pennsylvania during April, May and June under the auspices of the crippled children's division of the Pennsylvania Department of Health.

Million Dollar Gift to Hospital.—One million dollars has been given to the Reading Hospital by two citizens of Berks County, Ferdinand Thun and Henry Jansen, partners in the Berkshire Knitting Mills, who observed their eightieth birthdays in February. The only stipulation was that the money be used to expand the hospital.

Personal.—Dr. Carl O. Keck, Bethlehem, Pa., has been appointed director of the student health service of Lehigh University, Bethlehem, to succeed Dr. Raymond C. Bull, Bethlehem, Pa., who recently retired.——Ivor Griffith, Sc.D., president of the Philadelphia College of Pharmacy and Science, has been named a member of the advisory health board of the commonwealth of Pennsylvania by Governor Edward Martin. The appointment was made on March 13 and extends until the end of the next session of the state senate.

Philadelphia

Hospital News.—The name of the Home for Consumptives, located in Chestnut Hill, has been changed to All Saints' Hospital for Treatment of Tuberculosis.

The Heart and the School Child.—A symposium on the heart and the school child was held in the Administration Building April 15 under the division of medical services, school district of Philadelphia.

Personal.—Dr. Richard J. Campion, local medical officer of the Bell Telephone Company, has been appointed medical director of that company. He will now fill the duties of both offices. Dr. Campion succeeds Dr. George Morris Piersol, who retired last October on account of age.——Dr. Pascal F. Lucchesi, head of the Philadelphia Hospital for Contagious Diseases since 1933 and recently released from service in the Army of the United States on assignment to the Health and Sanitation Division, Institute of Inter-American Affairs, in Uruguay, has been named superintendent and medical director of the Philadelphia General Hospital to succeed Dr. Ignatius S. Hneleski, who resigned, effective March 1, to return to private practice.

Educational Cancer Secretary.—Mr. Elno C. Nicodemus has resigned as associate regional executive of the Southwest region of the USO to become educational secretary of the Philadelphia division of the American Cancer Society, a newly created position. Mr. Nicodemus will be responsible for the division's program of expansion on the educational front, which will include education of the public from school children up in what is known today about the causes, prevention and treatment of cancer, its "danger signals" and the public's responsibilities in the cancer control program.

Pittsburgh

Personal.—Dr. J. Huber Wagner, president of the staff of St. Francis Hospital, has been appointed chief surgeon of the Carnegie-Illinois Steel Corporation to succeed Dr. William O'Neill Sherman, who retired after thirty-five years' service with the company. Dr. Wagner has been associated with the steel corporation since 1920.

SOUTH CAROLINA

State Medical Meeting.—The South Carolina Medical Association will hold a meeting April 30-May 2 at the Ocean Forest Hotel, Myrtle Beach, under the presidency of Dr. William T. Brockman, Greenville. The Greenville County Medical Society will be host. Among the speakers will be:

Dr. William H. Kelley, Charleston, Certain New Antihistamine Drugs.
Dr. Charles G. Spivey, Columbia, Splenosis.
Dr. John F. Rainey, Anderson, Meningococcemia.
Dr. Horace G. Smithy Jr., Charleston, The Application of Sympathetic Nerve Interruption to Organic Obstructive Vascular Disease.
Dr. Edward F. Parker, Charleston, The Treatment of Hemothorax and Its Complications in Thoracic Injuries.
Dr. Lawrence P. Thackston, Orangeburg, The Management of Urethral Calculi.
Dr. Furman T. Wallace, Spartanburg, The Management of Thyroidectomy Incisions.
Dr. Joseph I. Waring, Dr. Harold R. Pratt-Thomas and J. A. Richardson, Charleston, Kerosine Poisoning.
Dr. Dargan S. Pope, Columbia, Indications for Interruption of Pregnancy and Puerperal Sterilization.
Dr. Arthur L. Rivers, Charleston, Practical Suggestions for the Care of Obstetric Patients.

Special addresses will be given by Dr. Richard B. Cattell, Boston, on "Gallbladder Disease"; Dr. Louis J. Hirschman, Detroit, "Proctology in Childhood," and Dr. Francis Carter, Durham, "Premature Detachment of the Placenta."

WEST VIRGINIA

Personal.—Dr. Donald J. McNairy, U. S. Public Health Service, who has been in charge of the rapid treatment center in Norfolk, Va., has been assigned as medical officer in charge of the Kanawha Valley Medical Center at South Charleston. He succeeds Dr. Robert D. Wright, who was transferred to the U. S. Public Health Service Laboratory at Staten Island, N. Y. Since the establishment of the Kanawha Valley Medical Center on March 6, 1944 more than 6,000 patients have received treatment for syphilis, gonorrhea and other venereal infections.

Honorary Life Memberships.—The West Virginia State Medical Association recently conferred life memberships on:

Dr. Benjamin M. Stout, Morgantown.
Dr. William M. Riley, Lillybrook.
Dr. Robert Wriston, Beckley.
Dr. Ralph C. Mitchell, Sabine.
Dr. Lonzo E. Steele, Logan.
Dr. Charles L. Kinney, Idamay.
Dr. William E. Whiteside, Parsons.

WISCONSIN

Personal.—Dr. Joseph S. Evans, Madison, was awarded honorary membership in the Wisconsin Hospital Association February 15 "for devoted service to medical education and the care of the sick."

State Board Reorganized.—The Wisconsin State Board of Health has been reorganized to include five main sections to facilitate public health administration in the state. The board is now composed of sections on preventable disease, sanitary engineering, local health service, maternal and child health, and general administration. Dr. Allan A. Filek, Madison, is supervisor of the section on local health services (THE JOURNAL, March 16, p. 728). Dr. Harry M. Guilford, Madison, director of the bureau of communicable diseases, will direct the section on preventable disease and Dr. Amy L. Hunter, Madison, will continue to head the section on maternal and child health. L. M. Warrick is in charge of the section on sanitary engineering. One new division has been created under general administration. Known as central statistical services, it will have charge of tabulating and making available all statistics for the use of public health personnel in the state. Vivian Holland was appointed acting chief statistician.

GENERAL

The Science and Art of Medicine.—On April 16 the *Science and Art of Medicine* made its appearance. The new publication is being brought out by the Macmillan Company, 60 Fifth Avenue, New York 11.

Pharmaceutical Association to Meet.—The 1946 meetings of the American Pharmaceutical Association, American Association of Colleges of Pharmacy and the National Association of Boards of Pharmacy will be held at the Hotel William Penn, Pittsburgh, August 25-30. Additional information may be obtained from Robert P. Fischelis, Sc.D., secretary, American Pharmaceutical Association, 2215 Constitution Avenue, Washington D. C.

Grant for Record Librarians.—The National Foundation for Infantile Paralysis has granted $83,000 to the American Association of Medical Record Librarians to provide in-service training opportunities for record librarians now employed, and scholarships for training medical record librarians. The grant is effective July 1 for one year. The executive secretary of the American Association of Medical Record Librarians is Mrs. Adaline C. Hayden, 18 East Division Street, Chicago 10.

Prisoners Act as Guinea Pigs in Experiments.—Twenty-five convicts in San Quentin Penitentiary have volunteered to accept injections of the amounts of streptococcus virus weekly for three to six weeks in a test to see whether immunity to streptococcic infections and perhaps rheumatic fever might be attained through use of vaccines, according to the *New York Times*, March 28. Dr. Lowell A. Rantz, assistant professor of medicine, Stanford University School of Medicine, San Francisco, is directing the research. It was expected that the experiments would be started early in April.

Pamphlets on Occupational Health. — The American Foundation of Occupational Health, room 1300, 28 East Jackson Boulevard, Chicago 4, is publishing a series of pamphlets on industrial health. The first carries a report of the committee on medical education of the American Association of Industrial Physicians and Surgeons entitled "The Teaching of Occupational Medicine." The American Foundation of Occupational Health was established as a trust under the laws of Illinois on June 22, 1945 to aid in the study and teaching of problems pertaining to the practice of industrial and occupational medicine and surgery, including direct expenditure for such purpose; grants to universities and colleges; establishment of endowments; establishment of scholarship and fellowship funds, and the donation of fellowships and scholarships. The foundation also means to cooperate in the development of industrial and occupational medical service and education and to conduct field and consultation services. Officers of the foundation are automatically officers of the association (The Journal, April 20, p. 1184).

Dr. Goodpasture Receives Passano Award.—Dr. Ernest W. Goodpasture, professor of pathology and dean of the Vanderbilt University School of Medicine, Nashville, has been announced as the recipient of the 1946 Passano Foundation Award. Presentation of the $5,000 cash award will be made in the Osler Hall of the Medical and Chirurgical Faculty of Maryland, Baltimore, May 15. The award was created by the foundation, which was established in 1944 by the Williams and Wilkins Company, medical publishers of Baltimore, to aid in any way possible the advancement of medical research, especially research that bears promise of clinical application (The Journal, Feb. 19, 1944, p. 521; April 14, 1945, p. 1003). Dr. Goodpasture was selected for his "original development of the method for propagation of viruses in pure culture by inoculation of chick embryos and for his outstanding contributions to advancement of knowledge of the cell parasite relationship in bacterial and virus infection." Following the presentation of the award by Mr. Edward B. Passano, chairman of the board of the Williams and Wilkins Company, Dr. Goodpasture will deliver an address on "Research and Medical Practice."

CANADA

Executive Director for Public Health Association.—Dr. James H. Baillie, Toronto, recently in charge of hygiene and preventive medicine in the Directorate of Medical Services, Ottawa, has been appointed executive director of the Canadian Public Health Association, Toronto.

New Department of Anesthesia at McGill.—Dr. Wesley Bourne, Westmount, Que., is chairman of a newly created department of anesthesia at McGill University Faculty of Medicine, Montreal. Chief objectives of the new department are to improve the teaching of anesthesia to the undergraduate students in medicine, to increase the opportunities for learning anesthesia among the interns of the hospitals connected with the university, to conduct a three year diploma course in anesthesia and to develop investigation in anesthesia in the clinic and in the laboratory from the point of view of interrelationship and in an interdependent fashion with the other departments of the university.

FOREIGN

New Medical Journal.—The first issue of *Clinica Nuova* recently appeared. Drs. M. Coppo and N. Aliotta are editor and assistant editor, respectively. This is a bimonthly Italian journal with headquarters at Viale 21 Aprile, 13, Rome. Price of subscription for one year is 360 lire (72 cents). Correspondence is to be sent to Casella Postal 164, Rome. The first issue contains sections of original articles, clinical notes, queries and minor notes, current medical literature and medical news.

Arab Medical Group Publishes Journal.—The *Journal of the Palestine Arab Medical Association* recently made its appearance. It is published in Jerusalem by the Palestine Arab Medical Association at the Economic Press, Jerusalem. Dr. M. T. Dajani, Jerusalem, is the editor. The journal is to be issued bimonthly in the Arabic and English languages. All communications should be addressed to the editors of the Journal of the Palestine Arab Medical Association, Mamilla Road 36, Jerusalem, Palestine.

David Anderson-Berry Prize.—A David Anderson-Berry silver-gilt medal, together with a sum of money amounting to about £100, will be awarded in 1947 by the Royal Society of Edinburgh to the person who, in the opinion of the council, has recently produced the best work on the therapeutic effect of x-rays on human diseases. Applications for this prize are invited. They may be based on both published and unpublished work and should be accompanied by copies of relevant papers. Applications must be in the hands of the General Secretary, Royal Society of Edinburgh, 22 George Street, Edinburgh 2, by December 1.

Swiss Hospital Opened.—On Sept. 29, 1945 the remodeled Burger Hospital, Basle, Switzerland, was formally opened. The hospital was established in 1842. Through the years four new building projects proved unsuccessful. In 1939 a building commission was formed with Dr. Moser, director of the Burger Hospital, as head. The preliminary demolition work was completed when World War II broke out. In 1940 a first aid station with medical service for war victims was opened; on Oct. 4, 1941 a foundation stone was laid for the first principal units of the renovated hospital comprising the huge main part of the new hospital, the so-called "house of beds" and the "treatment building." Five bridgelike connections form a link between the "treatment building" and the "house of beds." Operating rooms, emergency rooms, clinics, all treatment rooms, laboratories and the administration and reception offices are housed in the "treatment building," which has three floors and two auditoriums. On the ground floor of the "house of beds" are the installations for x-ray, diagnosis and physical medicine, while the first, second, third and fourth floors contain wards for both men and women. A second medical and a second surgical section with its own operating rooms are featured on the fifth floor. On the sixth floor of this "house of beds" are rooms for 2 patients each and on the seventh floor are single rooms with balconies. A building for patients suffering from contagious diseases forms part of the second construction stage, with completion due this spring. After this the parts remaining of the old Burger Hospital will gradually be modernized.

Government Services

Causes of Sudden Death

Dr. Alan R. Moritz, professor of legal medicine, Harvard Medical School, Boston, and honorary consultant to the Army Medical Library, and Capt. Norman Zamcheck of the medico-legal pathology division of the Army Institute of Pathology, are making a study of sudden death within the military age group. A selected list of ninety-two recent books and periodical references, a portion of the bibliography for this project, has been compiled by the reference division and comprises material in all languages published mainly since 1940. According to the *Army Medical Library News* the study deals with sudden deaths due to natural causes, the majority due to coronary artery disease, intracranial hemorrhage, meningococcic infection, miscellaneous causes and causes undetermined. To date approximately 500 cases are involved. It is expected that this project will be finished within a few months, the results to be published both separately and as a section in the history of the Army Medical Department of World War II.

Deaths

Walter Edward Dandy ⊕ celebrated specialist in neurology, died at the Johns Hopkins Hospital, Baltimore, April 19, of coronary occlusion, aged 60.

Dr. Dandy was born in Sedalia, Mo., April 6, 1886. He graduated at the University of Missouri in 1907 and Johns Hopkins University School of Medicine, Baltimore, in 1910. After his internship at Johns Hopkins Hospital he entered private practice in Baltimore.

He was a member of the founders group of the American Board of Surgery, a specialist certified by the American Board of Neurological Surgery and held memberships in various groups, including the American and Southern surgical associations and the American Neurological Association. He was also a fellow of the American College of Surgeons.

For many years Dr. Dandy had been a member of the staff of Johns Hopkins, serving latterly as adjunct professor of neurologic surgery in charge of surgery of the nervous system. It was in this field that he had contributed noted technics, particularly in surgery of the brain. He had introduced new operative procedures for tumors and aneurysms of the brain, for hydrocephalus and for neuralgias and other disturbances of cranial nerves; discovered ruptured intervertebral disks which cause low backaches and sciatica and introduced surgical procedure for their cure. Possibly it may be said that his major contribution was in the field of ventriculography, ventricular estimation and cerebral pneumography for diagnosis and localization of tumors of the brain and intracranial lesions.

Frank Manly Fuller ⊕ Keokuk, Iowa; Keokuk Medical College, 1897; born in Keokuk, Sept. 29, 1868; served as president and vice president of the Federation of State Medical Boards of the United States, chairman, secretary and member of the state board of medical examiners, president of the Iowa State Medical Society, of which he had been a life member, Lee County Medical Society, Iowa Clinical Medical Society, Southeastern Iowa Medical Society and the Des Moines Valley Medical Society; fellow of the American College of Physicians; formerly professor of chemistry and clinical diseases of children at his alma mater; for eight years a member of company A of the Iowa National Guard; a captain in the medical corps of the U. S. Army, serving overseas during World War I; specialist certified by the American Board of Internal Medicine; served the city as alderman and as physician to the board of health; for many years on the staffs of the Graham Protestant Hospital and St. Joseph's Hospital, where he died March 19, aged 77.

John Matthews Peters ⊕ Providence, R. I.; Harvard Medical School, Boston, 1887; born in Syracuse, N. Y., Nov. 2, 1863; served an internship at the Rhode Island Hospital, where he had been superintendent from 1889 to 1934, when he became superintendent emeritus; presented to the hospital the Charlotte Brooks Peters Library in memory of his wife; the "Peters House," a home for interns, was named for him; past president of the American Hospital Association, New England Hospital Association, Rhode Island Medical Society and Providence Medical Society; since 1909, the year of its creation, had been a member of the Providence Board of Hospital Commissioners; in 1931 awarded the honorary degree of master of arts by Brown University; died in the Butler Hospital January 27, aged 82, of bronchopneumonia and cardiovascular renal disease.

Mat Bloomfield ⊕ Joliet, Ill.; Rush Medical College, Chicago, 1912; born in Toledo, Ill., Dec. 25, 1887; fellow of the American College of Surgeons; president of the Will County Tuberculosis Association; past president of the Will-Grundy Counties Medical Society; physician for Selective Service Board number 1 during World Wars I and II; clinical instructor of obstetrics and gynecology at the University of Illinois College of Medicine, Chicago; surgeon, Illinois State Penitentiary at Stateville, the Elgin, Joliet and Eastern Railroad, the New York Central Railroad and the Carnegie-Illinois Steel Plant; physician and surgeon for the Joliet Township High School; on the staff of St. Joseph's Hospital; chief of staff of the Silver Cross Hospital; died January 6, aged 58, of carcinoma of the liver.

Harry Varsil Hubbard ⊕ Plainfield, N. J.; University of Vermont College of Medicine, Burlington, 1898; born in Rochester, Vt., Sept. 14, 1873; formerly associate professor of ophthalmology at the New York Post-Graduate Medical School and Hospital in New York; past president of the Union County Medical Society; for a term vice president of the American Medical Golfing Association; served during World War I; director of the Plainfield Savings Bank; consulting surgeon, Somerset Hospital, Somerville; for many years medical director of the Muhlenberg Hospital, where he was attending surgeon of the eye, ear, nose and throat department and consulting surgeon and where he died January 30, aged 72, of cerebral thrombosis and coronary thrombosis.

James Owen Howells ⊕ Bridgeport, Ohio; University of Pennsylvania Department of Medicine, Philadelphia, 1894; born in Haverfordwest, Wales, Feb. 17, 1863; fellow of the American College of Surgeons; also a graduate in pharmacy; member and at one time president of the Association of Baltimore and Ohio Railroad Surgeons; past president of the Belmont County Medical Society; for many years a member of the board of education; at one time a member of the staff of the Ohio Valley General Hospital at Wheeling, W. Va.; served as a member of the board of directors of the Belmont Sanatorium in St. Clairsville; died in Little Rock, Ark., January 4, aged 82, following an operation for carcinoma of the transverse colon.

William Russell Eastman ⊕ Colonel, U. S. Army, retired, La Jolla, Calif.; Columbian University Medical Department, Washington, D. C., 1901; Army Medical School, 1902; fellow of the American College of Surgeons; entered the regular army in 1901; promoted through the various grades to that of lieutenant colonel in 1917 and retired in the same rank Dec. 15, 1922 for disability in line of duty; for meritorious service during World War I was awarded a citation from General Pershing; promoted to the rank of colonel, retired, under the Act of June 21, 1930; associated with the Scripps Memorial Hospital; died in the U. S. Naval Hospital, San Diego, December 28, aged 72, of cerebrovascular disease.

Donald Blair Lowe ⊕ Akron, Ohio; Western Reserve University Medical Department, Cleveland, 1912; born in Kingsville, Ohio, Aug. 1, 1883; formerly instructor of medicine at his alma mater; joined the U. S. Public Health Service in 1914; past president of the Summit County Medical Society and the American Association of Industrial Physicians and Surgeons; member of the American Public Health Association; fellow of the American College of Physicians; in August 1915 named medical director of the B. F. Goodrich Company; member and in 1936 chief of staff of the City Hospital, where he died March 2, aged 62, of acute pancreatitis.

Edwin Atkins Merritt ⊕ Washington, D. C.; University of Nebraska College of Medicine, Omaha, 1904; clinical professor of radiology at the Georgetown University School of Medicine; specialist certified by the American Board of Radiology; member of the American Roentgen Ray Society; served during the Spanish-American and World wars; delivered the second Davidson Foundation Lecture in October 1933; director of the Warwick Memorial Cancer Clinic; radiologist at the Garfield Memorial Hospital; served as consultant at the Veterans Administration Facility and as consultant and member of the national advisory council, U. S. Veterans Bureau; died in St. Petersburg, Fla., April 9, aged 66.

Elmer Maurice Smith ⊕ Mount Vernon, Ill.; Medical College of Indiana, Indianapolis, 1889; born on July 5, 1868; served as radiologist overseas for eighteen months in World War I with rank of major in the medical corps of the U. S. Army; radiologist at the Mount Vernon Hospital from 1925 to 1942 and the Good Samaritan Hospital until January 1946; at one time associated with the U. S. Public Health Service Reserve; member of the International Congress of Radiology; in 1939 admitted into the fifty year club of the state medical society; died March 7, aged 77, of coronary thrombosis.

Albert Allen Alleyne, Atlantic City, N. J.; Howard University College of Medicine, Washington, D. C., 1915; served as city physician; died January 9, aged 63, of carcinoma of the liver and colon.

Anastasios Stavros Bacalis, Detroit; National University of Athens School of Medicine, Greece, 1917; died January 23, aged 53.

Oscar Baer ⊕ Niagara Falls, N. Y.; New York Homeopathic Medical College and Hospital, New York, 1911; past president of the Niagara Falls Academy of Medicine and the Niagara County Medical Society; member of the staff of the Mount St. Mary's Hospital; chief of obstetrics and for a time served as head of the medical staff of the Memorial Hospital, where he died December 30, aged 67, of congestive heart failure and hypertension.

Adolphus Edmund Bertling ⊕ Chicago; Rush Medical College, Chicago, 1895; an Affiliate Fellow of the American Medical Association; at one time associate professor of genito-urinary diseases at the Illinois Post-Graduate Medical School; served on the staffs of the West Side and Frances Willard hospitals; died in the West Suburban Hospital, Oak Park, January 6, aged 80, of coronary occlusion.

Caesar Cassano, Elmhurst, N. Y.; New York University College of Medicine, 1939; member of the American Medical Association; also a graduate in pharmacy; served an internship and residency at the New York City Hospital, Welfare Island; formerly associated with the Kings County Hospital in Brooklyn and the Manhattan General Hospital; died recently aged 36.

Richard H. Cobb, Franklin, Va.; Memphis (Tenn.) Hospital Medical College, 1883; member of the American Medical Association; for many years member of the school board and town council; died January 3, aged 82, of cerebral hemorrhage.

Harold John Cooper ⊕ Fresno, Calif.; Stanford University School of Medicine, San Francisco, 1921; in 1930 appointed medical director of the aeronautics branch of the department of commerce; began active duty as a major in the medical corps, Army of the United States, in May 1941 and service terminated in December 1941; died recently aged 51.

Edward Joseph Deibert ⊕ Hellertown, Pa.; Medico-Chirurgical College of Philadelphia, 1911; on the staff of St. Luke's Hospital, Bethlehem; died January 3, aged 61, of cerebral thrombosis.

Ernest Dickey, Rockville Centre, N. Y.; McGill University Faculty of Medicine, Montreal, Que., Canada, 1922; on the staffs of the Meadowbrook Hospital, Hempstead, Nassau Hospital, Mineola, and the Mercy and South Nassau hospitals; member of the American Medical Association; died December 23, aged 50, of coronary thrombosis.

Samuel L. Diven, Carlisle, Pa.; University of Pennsylvania Department of Medicine, Philadelphia, 1884; formerly a member of the board of health and county coroner; died December 25, aged 90, of myocardial failure.

James William Eckford, Starkville, Miss.; Medical Department of Tulane University of Louisiana, New Orleans, 1896; died in the Doster Hospital, Columbus, January 5, aged 72, of coronary occlusion.

William James Fenelon, Ripon, Wis.; Rush Medical College, Chicago, 1894; died December 29, aged 80, of cardiovascular renal disease.

Daniel Sebastian Fisher ⊕ Hughesville, Md.; University of Maryland School of Medicine and College of Physicians and Surgeons, Baltimore, 1921; served as health officer of Charles County and as chief of staff of the Physicians Memorial Hospital in La Plata; died in the University Hospital, Baltimore, January 5, aged 53, of coronary thrombosis.

Vern William Graham ⊕ Corry, Pa.; Jefferson Medical College of Philadelphia, 1915; member of the civil service board; interned at the Hamot Hospital in Erie; associated with the Corry Hospital; died January 10, aged 58, of cardiac decompensation.

Paul Lincoln Greene ⊕ Livingston, Mont.; Drake University College of Medicine, Des Moines, 1909; served during World War I; captain, National Guard, not on active duty; served as mayor of Livingston and as chief surgeon of the Northern Pacific Beneficial Association Hospital, Missoula, where he died January 5, aged 60, of carcinoma.

John Livermore Hazen ⊕ Brockport, N. Y.; University of Buffalo School of Medicine, 1898; born in 1876; past president of the New York and New England Association of Railway Surgeons and of the Association of Surgeons for the New York Central System; served as physician at Brockport State Teachers College; health officer; for many years coroner's physician for western Monroe County; formerly welfare physician for the towns of Sweden, Clarkson and Hamlin; died January 10, aged 69, of cardiac decompensation.

Edward Sterling Hodgskin, Rockville Centre, N. Y.; College of Physicians and Surgeons, medical department of Columbia College, New York, 1893; for many years practiced in Brooklyn, where he was on the staff of the Midwood Hospital; died in the Meadowbrook Hospital, Hempstead, December 30, aged 75, of multiple sclerosis.

Lysle Clarence Howe ⊕ Muscatine, Iowa; Keokuk Medical College, College of Physicians and Surgeons, 1903; died in the University Hospitals, Iowa City, in January, aged 68, of injuries received in an automobile accident.

Mae Christina Joyce, Bancroft, Mich.; Saginaw Valley Medical College, Saginaw, 1902; died in the Memorial Hospital, Owosso, January 17, aged 70, of an injury received in a fall.

Wallace D. Kennedy, Metter, Ga.; University of Georgia Medical Department, Augusta, 1891; member of the American Medical Association; served as a member of the city council and as state senator; part owner and medical director of the Kennedy Memorial Hospital, where he died December 28, aged 73, of carcinoma of the stomach.

William Amadeus Langsteen, Denver; Medizinische Fakultät der Universität Wien, Vienna, Austria, 1923; diplomate of the National Board of Medical Examiners; served a residency at the Colorado State Hospital, Pueblo; interned at the St. Anthony's Hospital, where he died December 21, aged 46, of pneumonia.

Lawrence Levy, Garden City, N. Y.; Ludwig-Maximilians-Universität Medizinische Fakultät, Munich, Bavaria, Germany, 1898; member of the American Medical Association; died December 31, aged 70, of coronary occlusion.

William Byron Lingard, Chicago; Chicago College of Medicine and Surgery, 1913; member of the American Medical Association; found dead January 13, aged 63.

Joseph Jerome Livingston, Tyler, Texas; Medical Department of Tulane University of Louisiana, New Orleans, 1910; served overseas during World War I; died recently, aged 70, of heart disease.

Edward Christopher McDaniel, Tyronza, Ark.; St. Louis College of Physicians and Surgeons, 1901; member of the American Medical Association; honorary member of the Arkansas Medical Society; in 1916 vice president of the Tri-State Medical Society; died January 4, aged 71, of cerebral hemorrhage.

Thomas Roy McLellan, Aliceville, Ala.; Memphis (Tenn.) Hospital Medical College, 1903; member of the American Medical Association; died in the Doster Hospital, Columbus, December 20, aged 69, of meningitis.

John William McMahan, Bedford, Ky.; University of Louisville Medical Department, 1893; died December 27, aged 80, of arteriosclerosic heart disease.

John Franklin Noyes, American Fork, Utah; University of Louisville Medical Department, 1894; died December 8, aged 83, of carcinoma of the prostate.

Roe Bernard Reed, Clearfield, Iowa; State University of Iowa College of Medicine, Iowa City, 1927; interned at St. Mary's Hospital, Kansas City, Mo.; member of the American Medical Association; city health officer; on the staff of the Decatur County Hospital, Leon; died December 20, aged 44, of angina pectoris.

Mason William Ross ⊕ Brooklyn; Long Island College Hospital, Brooklyn, 1921; on the staff of the Bay Ridge Hospital; died January 7, aged 49, from carbon monoxide poisoning.

John H. Sandel, Danville, Pa.; Hahnemann Medical College of Philadelphia, 1882; member of the American Medical Association; for many years secretary of the Montour County Medical Society; died in the Danville State Hospital December 13, aged 91, of arteriosclerosis.

John Stephen Scott, Boston (licensed in Massachusetts in 1911); died recently, aged 76, of myocardial infarction.

Ray Hammond Shattuck, Boston; Middlesex College of Medicine and Surgery, Cambridge, 1920; died in the City Hospital January 2, aged 54, of cerebral sclerosis.

George Emerson Simpson ⊕ Indiana, Pa.; Medical Department of the Western University of Pennsylvania, Pittsburgh, 1894; fellow of the American College of Surgeons; chief of the surgical staff, Indiana Hospital; vice president of the First National Bank; died January 2, aged 76, of coronary heart disease.

Thaddeus Warsaw Stephens, Chicago; Meharry Medical College, Nashville, Tenn., 1901; died December 20, aged about 70, of carcinoma of the prostate.

Harry Hill Van Kirk ⊕ Lieutenant Colonel, U. S. Army, retired, Delaware, Ohio; Starling Medical College, Columbus, 1898; retired Oct. 31, 1932 at his own request after thirty years' service; formerly professor of military science and tactics at Western Reserve University School of Medicine, Cleveland, and assistant professor of military science and tactics at Ohio State University College of Medicine in Columbus; died in the Fort Hayes Hospital January 3, aged 73, of arteriosclerosis.

Charles Martel Werts ⊕ Des Moines; State University of Iowa College of Medicine, Iowa City, 1902; fellow of the American College of Surgeons; served as lecturer and clinical instructor at the Drake University College of Medicine; on the staffs of the Iowa Methodist and Iowa Lutheran hospitals; died January 4, aged 69, of leukemia.

David Wilson ⊕ Amsterdam, N. Y.; Cornell University Medical College, New York, 1907; died December 29, aged 61, of carcinoma of the stomach.

James William Wilson, Clearwater, Fla.; Bellevue Hospital Medical College, New York, 1880; died December 29, aged 88, of congestive heart failure and arteriosclerosis.

Foreign Letters

LONDON

(From Our Regular Correspondent)

March 30, 1946.

The British Medical Association and the National Health Service Bill

The British Medical Association has started an active campaign against the national health service bill. A mass meeting of the practitioners of Surrey, which includes a large part of South London, was addressed by Dr. Charles Hill, secretary of the British Medical Association. He said that the profession had for a long time pleaded for improvement and extension of health facilities and that some of the proposals in the bill were good, such as the organization of the hospitals on a regional basis. The proposals should be measured first by the public interest and second by the principles which had guided the profession in the formulation of its policy. Beneath those principles there was a firm determination to resist the conversion of the profession into a technical branch of central or local government. This would divide loyalties between patients and the body, state or other, which employed and directed the physicians. Although there were not naked proposals for whole time salaried service under the state, the question was whether the proposals contained the germ of such a service. The minister of health proposed to abolish the buying and selling of practices with compensation of the present owners. However, this buying and selling was the basis for the voluntary distribution of practitioners, and its abolition would mean a system of posting, placing and appointing general practitioners in the future. Again, the proposal to remunerate the practitioner largely by salary was likely to lead sooner or later to his becoming a wholly salaried officer of the state. The government by its majority might carry these proposals. Then the profession must do its utmost to present its point of view to all fair minded people in all parties. The one hope was to convince the public that the proposals were not in their interest. A movement toward a whole time salaried service meant a crisis in the history of the profession. The government could legislate, but without the cooperation of the profession there would be no service. A decision on this would have to be taken, but not until the bill had become an act.

F.R.S. Conferred on Five Members of the Medical Profession

The coveted distinction of F.R.S., which is an unequivocal mark of scientific eminence, has been conferred on five members of the medical profession: Dr. G. R. Cameron, professor of morbid anatomy at University College Hospital and assistant editor of the *Journal of Pathology and Bacteriology,* who has done research during the war for the government, including investigations on the effects of blast and on the local absorption of toxic substances, such as tannic acid. Brig. J. A. Sinton, V.C., of the Indian Medical Service, formerly director of the Malaria Survey of India, who retired in 1938 but returned to official service during the war, in which his exceptional knowledge of malaria and its transmission proved of great value. Dr. J. W. Trevan, director of the Wellcome Physiological Research Laboratories, who has made important investigations in the use of a wide variety of drugs. Dr. G. L. Brown of the National Institute for Medical Research, who took part before the war in the work initiated by Dale on the transmission of nerve impulses. The Royal Society has also conferred its fellowship on eminent clinicians, including Dr. F. M. R. Walshe, physician to the National Hospital, Queen Square, chief of the Neurological Department, University College Hospital, and editor of *Brain.*

Tubocurarine Chloride in Anesthesia

The use of tubocurarine in anesthesia was discussed at a recent meeting of the Section of Anesthetics of the Royal Society of Medicine. Dr. T. Cecil Gray pointed out that in this centenary of Morton's discovery a new advance has been made which may prove to be equally significant. The possibilities of tubocurarine were not realized until April 1945, when the crystallized extract was prepared from curare by Burroughs Wellcome. Recent work has suggested that muscular relaxation is produced by preventing the action of acetylcholine at the neuromuscular junction. In clinical use no effects on the electrocardiogram have been observed, but further investigation is required. Laryngeal and bronchial reflexes are depressed, preventing spasm.

Dr. John Halton reported the use of tubocurarine in 1,040 thoracic surgical cases, with 2 deaths which might have been attributed to the anesthetic. The disadvantages of pentothal alone were avoided (frequent cough and laryngeal spasm). The author has used 1.1 Gm. of pentothal and 25 mg. of tubocurarine with oxygen supplied in a closed circuit. The method is commended because of rapid induction with absence of spasm, ease of control, quick recovery and uneventful convalescence. There appears to be a synergism between the barbiturates and tubocurarine. The drug is not an anesthetic. Postoperative complications are lessened and the well-being of patients postoperatively is improved. The drug is powerful and safe but should not be used in the presence of extensive renal damage.

THE NETHERLANDS

(From Our Regular Correspondent)

Amsterdam, March 24, 1946.

Blood Dialysis as a Method of Treatment for Uremic and Anuric Conditions

In a dissertation, to be published in the *Archives néerlandaises de physiologie* and in a paper in the *Nederlandsch tijdschrift voor geneeskunde,* W. J. Kolff describes his method of treatment of toxemic patients. It consists in cannulation of the radial artery and a vein, after heparinization. The blood is led through a dialyzing system, carefully kept at body temperature, and back to the organism. The apparatus requires 500 cc. of blood in order to be filled. The dialyzing surface amounts to 24,000 cc. In fourteen hours' passage of blood through such an artificial kidney, 250 Gm. of urea was eliminated from 120 Kg. of blood passed through the system. The manipulation can be repeated at intervals of four to six days. In addition to urea, uric acid, creatinine and indoxyl are eliminated from blood by the procedure. Patients in a hopeless condition were chosen for testing the method. The ultimate results were less satisfactory than they might have been with patients in a better condition. However, great relief was achieved for a few days, which might have offered a chance for eventual recovery instead of death in uremia. At the end of the actual dialyzing process the cannulas were left in situ for twenty-four hours, while the attachment to the apparatus was interrupted by screw clips. Blood sampling and transfusion could be done during this period. The cannulas were removed when the coagulability of the blood had returned to its normal level.

Hunger Osteopathia (Osteomalacia) in The Netherlands

A syndrome similar to that described in central Europe during 1918-1919 occurred in this country during 1943-1945. A report of Pompen, la Chapelle, Groen and Mercx comprises 24 cases of osteopathia, 22 in women. This sex distribution is ascribed to sex linked eating habits rather than to other sex differences. All case histories include diets deficient in calcium, phosphorus, fat and animal protein and lack of vitamin D. Moreover, all the patients lived indoors for a long time, several of them in convents. The 2 men were Jews, forced to hide for years and subsisting on scanty food. Symptoms resemble rheumatism, with back ache and painful extremities manifested early by difficulty in climbing stairs and later by inability to move rapidly or to use the arms and legs normally. The muscles are painful. Signs of the disease include transverse bands or notches of diminished x-ray opacity in the long bones and pelvis, indicating abnormal skeletal reaction to normal use. Fractures are prone to occur. Earlier cases were observed in which bone changes had not occurred but in which symptoms and response to treatment were suggestive of hunger osteopathia. In addition to malnutrition and lack of actinic influences, middle age, exercise and sex definitely contribute to the incidence. Treatment consisted in initial confinement to bed and a diet to which animal protein and calcium as well as vitamin D were added. Injection of the latter may be necessary. Recovery usually occurred within two weeks, and x-ray findings disappeared in two months. The similarity with peacetime complaints of obscure etiology and significance may eventually draw attention to malnutrition and to therapeutic measures on similar lines as those whose value is now proved by the cases of hunger osteopathia. This report will appear in a Scandinavian medical journal and in the *Acta brevia Neerlandica.*

Other Forms of Starvation Disease

Formijne and van Eck (*Nederlandsch tijdschr. v. geneesk.*, 1945, No. 15, p. 164) draw attention to a similarity between starvation edema and that due to glomerulonephritis. The eyelids are often swollen, and blood albumin is decreased, though less constantly and seriously than would be expected. There is no albuminuria. In two later issues (numbers 18 and 19) of the same journal Formijne Drukker and van Loghem further contribute to the same subject by stating that hypoalbuminemia is very inconstant, venous pressure is not increased and fluid from edematous tissue has a low protein level. Various aspects of metabolism and digestion are disturbed in starvation disease, including anemia, hemorrhagic diathesis, cutaneous changes such as yellow nails, pigmentation, a kind of pellagra, decreased coagulability of the blood, bradycardia and very low body temperatures. One patient with an admission rectal temperature of 80.4 F. was warmed by hot water bottles to 85.4 F. but died nevertheless. Sudden death is not infrequent in these cases. Therapy consisted in rest, warmth and increased protein and butter rations. No hydrolyzed protein was used. The number of calories given per day was slowly increased from 1,600 to 2,500. No especial avitaminosis was observed.

Leiden University

The 371st anniversary of the founding of Holland's oldest university occurred on February 8. This was the first anniversary meeting to be held since the liberation. During the last years of German occupation the university was closed because the staff as a whole resisted attempts to transform the institution into a center of nazi education. Queen Wilhelmina gave an address in honor of the professors and members of staff who headed the resistance. Announcement was made by the rector, Professor B. G. Escher, that the senate would offer an honorary degree of Doctor of Leiden University to Mr. Winston Churchill.

Meeting of Biochemical Society

The first postwar meeting of the Biochemical Society on February 16 was devoted to a review of the progress in the Allied countries in research nutrition, tuberculosis, thyrotoxicosis and malaria.

The Supply of Penicillin

There is too little penicillin available for urgent needs. The causes of this shortage are not clear, but it is obvious that its effects are disastrous for those whose life depends on it.

ITALY

(From Our Regular Correspondent)

March 5, 1946.

Medical Lectures

Dr. Andre Le Renard of the Pasteur Institute of Paris recently gave lectures at a number of Italian universities. Dr. Renard was chief of the military sanitary center in North Africa during the war prior to appointment as director of the sanitary services of French troops in Italy. He discussed the mechanism of transformation of toxin into anatoxin in the preparation of vaccines. Formaldehyde, with increase in temperature and concentration, in the presence of amino acids shows a decreasing affinity for tryptophan, tyrosine, cysteine and phenylamine and still less affinity for serines, glutamic acid, leucine and alanine. Affinity decreases gradually, but the toxin retains part of its toxicity as long as its affinity to amino acids is decreasing. When chemical stability is established, toxin is transformed into anatoxin. Natural protein antigens (microbes, toxins and cells) have individual chemical actions during the processes of immunization and infection. Pathogenic toxins are complexes of amino acids. In the presence of formaldehyde, increasing in temperature and concentration, these substances attack the amino acids with resultant loss of capacity for fixation of toxin for proteins, but with preservation of the capacity of seizing the acids of the right chains. In this way the toxin loses its power of fixation but retains its antigenic structure. Consequently, through integral fixation on the antibody, the toxin is transformed into anatoxin. This explains an occurrence of ten years ago. A diphtheria anatoxin was marketed which had been prepared by serotherapeutic institutions in Piedmont and Lombardy. Many cases of diphtheria with high mortality occurred among vaccinated children. The laboratories were exonerated, but the heads of the institutions were put in jail by Mussolini. Exaggerations in the daily press resulted in a spreading fear of vaccination. It is apparent that the anatoxin which was empirically disintoxicated for laboratory animals had not reached the proper level of chemical stability, and consequently the transformation of toxin into anatoxin had not occurred.

Recent Progress

Recent progress in Italy includes the production of antibiotics in industrial centers in Rome and Siena and the preparation and publication of important books on obstetrics, cardiology and electrocardiology. In a book on erythremic diseases Dr. Di Guglielmo discusses the diagnosis and the differentiation of chronic polycythemia vera and acute and chronic erythremic myelosis. A differential character of polycythemia is that maturation of erythrocytes is complete, whereas maturity of the erythrocytes is not reached in erythremic myelosis. The therapy and prognosis of these diseases are different. Radioactive phosphorus is indicated in chronic polycythemia vera.

Marriages

Richard George McManus, New Rochelle, N. Y., to Miss Marjorie Alberta Andresen of Brooklyn, March 2.

Edward O. Lonterkamp to Miss Rosemary Grellner, both of St. Louis, in Clayton, Mo., January 26.

Richard Anderson Michaux to Miss Julia Gray Saunders, both of Richmond, Va., December 8.

Luis Carlos Priete Jr., St. Louis, to Miss Helen Hunter Rhodes of Mobile, Ala., March 2.

William David Pace to Miss Maxine Charlier, both of Salt Lake City, March 12.

Joseph C. Presti, Baltimore, to Miss Angelina Alioto of San Francisco, February 2.

Herbert Leon Newbold Jr. to Miss Susan Rebecca Greison, both of Chicago, March 8.

Correspondence

THE SMALLPOX SITUATION IN SAN FRANCISCO

To the Editor:—Previous to January 1946 cases of smallpox had been absent for some years from the disease reports in San Francisco, the date of the last case being reported Jan. 6, 1939.

On Jan. 2, 1946 a case of smallpox was reported from an army hospital located in San Francisco. The patient left Japan on Dec. 21, 1945 by airplane, and the record indicates that he was suffering from a nasal pharyngitis; he arrived in Honolulu December 25 and was diagnosed as having influenza; he arrived at Hamilton Field, near San Francisco, the evening of December 27 and was transferred to an army hospital in San Francisco December 28 with the diagnosis of influenza-pneumonia. A rash appeared December 29 and the patient was placed in isolation December 30, the final diagnosis being smallpox on December 31. The patient was transferred to a second army hospital in San Francisco. The record further reports no visible vaccination scar.

The second, and first local, case was reported to and diagnosed as smallpox by the health department on Jan. 21, 1946. It is of epidemiologic interest to note that the patient resides within a block of the army hospital where the original patient was isolated and treated, that the onset was January 15, the rash appearing on January 19, that living in the same apartment house with this patient are numerous employees of the army hospital housing the original smallpox patient, that no direct contact with him can be definitely ascertained epidemiologically and that this patient showed no vaccination scar or had left San Francisco for some time previous to the onset of smallpox.

The third, and second local, case occurred in a Negro child who had not been vaccinated against smallpox at a university clinic where he was under treatment for asthma, presumably because of the bronchial asthma. It is of epidemiologic interest that this patient had been in the San Francisco Hospital of the Department of Public Health from January 26 to January 31 on account of bronchial asthma, that the pediatric ward in which this patient was confined with bronchial asthma was directly above local case 2 and that the rash appearing February 14 is epidemiologically suggestive of contact by some means yet undetermined with case 2.

Local patients 3, 4, 5 and 6 are all contacts to local case 2; all were vaccinated, showing positive vaccinia at the time of onset and all living at the same address.

Local patient 7, however, deserves especial notice. This is a health department employee in a responsible position in the San Francisco Hospital, allegedly frequently vaccinated but with no evidence of vaccinia; he apparently avoided the general vaccination order of San Francisco Hospital and visited the isolation division of the hospital only in routine duties not connected with any type of case.

Nonlocal patients 8, 9 and 10 are 2 soldiers and 1 sailor en route by ship from Korea and other Oriental ports.

It is of interest that nonlocal patient 10 was released from quarantine, was allowed shore leave and visited numerous places in San Francisco, including crowded theaters; the signs of the rash of smallpox appeared the following day. Two vaccinations were given in a period of three weeks, both classified as nontakes. His original service record indicates an immune reaction but no vaccination scar.

Patient 8, aged 36 years, had an old vaccinia scar of childhood and was supposedly revaccinated in January 1946. Although listed on the record as positive vaccinia, there is no evidence of a recent vaccinial scar.

Patient 9, aged 25 years, showed a vaccination scar supposedly obtained in December 1945; he was revaccinated and does not show a recent vaccinial scar. Furthermore, his record indicates two recent vaccinations, both negative.

Beginning with the first local case, the number of contacts, which were quite numerous including a federal employment agency, were vaccinated; the acceleration of the usual number of vaccinations in schools was begun; all hospitals and clinics were notified and vaccination of staffs was suggested, and notification to physicians was made through the San Francisco County Medical Society Bulletin.

The concentration of local patients 2, 3, 4, 5 and 6 in an overcrowded and substandard housing area made it imperative to begin a vaccination campaign among all citizens by, first, advocating vaccination by the family physician or by hospitals or clinics, both private and public. Therefore the campaign gathered momentum to the extent that, as of April 1, 606,106 vaccine points had been used in San Francisco by all agencies concerned. The campaign is still continuing. The amazing response by an intelligent and health educated community over the years to the appeal for vaccination against smallpox and the estimated 33 per cent positive vaccinia recorded is, it is hoped, a safe sequence to a real threat of a virulent type of smallpox in San Francisco.

J. C. Geiger, M.D., San Francisco.
Director of Public Health.

SPEAKER'S INDOCTRINATION COURSE

To the Editor:—It is apparent that, with the present aggressive drive for social legislation which is now being carried on, it is necessary for every state and county medical society to have informed public speakers on this subject. The number of physicians who are available for this work is very small and for obvious reasons: either these men are too busy to inform themselves on the subject of socialization of medicine as far as factual information is concerned or they do not have the time required to accept speaking engagements.

For these reasons I should like to suggest that the American Medical Association provide, at some central point such as Chicago or Washington, D. C., a briefing course of three or four days for indoctrination and presentation of factual information as well as any other information which may be useful for speakers who meet the public, particularly the executive secretaries of state and county societies, so that after three or four days of such training these full time men who have been exposed to at least the nucleus of preparation will be in a better position to transmit authentic information to the public. It is taken for granted that the traveling expenses of each of these participants will be paid by the corresponding societies.

We have found that, by sending out speakers on socialized medicine, the public and our cause has benefited greatly. The Allegheny County Medical Society has had speakers appear before various service clubs and community organizations and also has debated this question with proponents of the Wagner-Murray-Dingell legislation.

In fact, these personal contacts have improved our public relations tremendously. Because of the success we have had in Allegheny County with our type of program, we feel that other medical societies might be interested in putting a similar program across.

Committee on Medical Information.
Leo H. Criep, M.D., Chairman.
Fred M. Jacob, M.D.
N. C. Ochsenhirt, M.D.
Pittsburgh.

FILARIASIS

To the Editor:—Since the outbreak of the war in the Pacific and the consequent infection of considerable numbers of American troops with Wuchereria bancrofti, professional persons and laymen have developed a keen interest in filariasis. The search for cure has been followed breathlessly by interested members of both groups. In your editorial of March 16 entitled "Therapy of Filariasis Bancrofti" you point out that considerable progress has been made in the study of antimony compounds in filariasis.

The editorial goes on to say, referring to the work of Culbertson and his associates, "With the exception of 1 patient suffering from periodic chyluria, all were rendered symptom free." To the best of my knowledge it has not been claimed by these workers or by any one else that the antimony compounds are effective in alleviating the symptoms of filariasis.

In some infected human beings it has been possible to observe a decline in the numbers of circulating microfilariae, with final disappearance of these organisms in many cases, following antimony therapy. However, most persons who have circulating microfilariae do not have symptoms of the disease, and, conversely, most of those who have symptoms do not exhibit microfilariae in the blood. With few or no exceptions the members of our armed forces who have been infected belong to the latter group. We do not yet know the effects of antimony compounds in this type of case.

In the original article to which you refer (Culbertson, J. T.; Rose, M. M., and Oliver-Gonzalez, José: *Am. J. Trop. Med.* **25**:403 [Sept.] 1945), under the heading "General Procedures," there is the following statement: "All were free of symptoms of filariasis except one individual, . . . who had periodic chyluria for several years." I feel quite certain that the authors were describing the state of affairs which existed in their patients before the institution of therapy, not the results of therapy.

In view of the fact that a considerable number of persons affected with this disease in symptomatic form have great apprehension about it and are extremely anxious for some form of specific treatment, I believe that it would be of great importance to clarify this matter as soon as possible.

Howard B. Shookhoff, M.D., New York.
Epidemiologist, Tropical Diseases.

INFLAMMABLE CLOTHING

To the Editor:—The frequency of serious accidents caused by ignition of highly inflammable clothing has recently brought the problem of hazardous fabrics to public attention, and federal legislation to prohibit the shipment in interstate commerce of hazardous fabrics for clothing has been proposed. In connection therewith the National Bureau of Standards has been asked to compile information on the types of fabrics which have figured in deaths and burns, for use in development of suitable requirements based on applicable tests. The primary interest lies in cases where clothing has burned with unusual rapidity, and particularly where sources of ignition have been small, such as sparks from a fireplace or bonfire, or a struck match.

It is difficult to locate records of such accidents sufficiently complete to provide information on the fabric involved or names and addresses of accident victims who could be contacted directly. The cooperation of physicians and other readers of The Journal who can supply information thereon will be greatly appreciated.

S. H. Ingberg, Washington 25, D. C.
Chief, Fire Resistance Section, National
Bureau of Standards.

Bureau of Legal Medicine and Legislation

MEDICOLEGAL ABSTRACTS

Malpractice: Negligent Roentgen Examination by Chiropractor.—The plaintiff sued the Los Angeles College of Chiropractic and others for damages alleged to have been caused by the malpractice of a chiropractor in examining and x-raying the plaintiff's back. From a judgment against the college and one of the individual chiropractors, the college appealed to the district court of appeal, second district, division 1, California.

The plaintiff injured his back and was taken by a friend to the Los Angeles College of Chiropractic, where defendant Metzinger, a chiropractor, examined him. At the conclusion of the examination, Metzinger told the plaintiff that he had a bad sprain and should have some roentgenograms taken. The plaintiff was then carried to the x-ray laboratory in an adjoining room, where the defendant Joyant, also a chiropractor, who operated the laboratory, made an anterior-posterior x-ray of the plaintiff's pelvis, including the lumbar vertebrae and the lower dorsal vertebrae. After examining the x-ray, Joyant told the plaintiff "Well, this confirms the doctor's diagnosis. There are no bones broken." Plaintiff was then taken home, where he remained in bed for three days suffering intense pain. On the fourth day he called an M.D. and was taken to the Los Angeles General Hospital, where both lateral and anterior-posterior roentgenograms were taken. It was then discovered that the plaintiff was suffering from a compression fracture of the twelfth dorsal vertebra.

The college first contended that Joyant, in operating the x-ray laboratory, was neither its agent nor employee at the time of the plaintiff's examination. The evidence indicated that the ground floor of one of the college buildings was divided into three rooms, with the x-ray laboratory on one side, a chemical laboratory on the other and the college waiting room in between. All the x-ray equipment was owned by the college president, who had owned the laboratory as well for many years. In 1929 an arrangement was made with the defendant Joyant whereby the latter, in return for free rent, telephone and janitor service, agreed to teach the x-ray course in the college whenever it appeared on the curriculum and to perform all necessary x-ray work on the president's patients. Neither the college nor the president, however, prescribed the fees which Joyant could charge his own patients or dictated rules for the operation of the laboratory or the hours during which it should be open. The plaintiff testified that he had never before been treated at the college and knew no one connected with it. After the examination by Metzinger, the plaintiff was taken into the x-ray room, where Joyant made the roentgen examination, following which Joyant said that his regular charge was $15 but that because the plaintiff's friend was a former student at the college he would charge only $7.50.

Before a recovery can be had against a principal for the alleged act of an ostensible agent, said the court, it must be shown that the third person dealing with the agent did so with a reasonable belief in the agent's authority, that the belief was generated by some act or neglect of the principal sought to be charged and that the third person, in relying on the agent's apparent authority, was not guilty of any negligence on his own behalf. So far as the record reveals, the court said, the college did nothing to put the plaintiff on notice that the x-ray laboratory was not an integral part of the institution, and it cannot seriously be contended that the plaintiff, when he was being carried from room to room suffering excruciating pain, should have inquired whether the individual doctors who examined him were employees of the college or were independent contractors. Agency is always a question of fact for the jury, and the court held that the evidence in the case was sufficient to support the jury's implied finding that Joyant was the ostensible agent of the college.

The college also contended that there could be no recovery against an x-ray technician unless two facts are established: negligence on the part of the technician, and evidence that the pictures were used by physicians in treating the plaintiff or as a diagnostic aid. The record reveals, said the court, that Joyant did not follow the generally accepted practice of taking a lateral, as well as an anterior-posterior, x-ray wherever an injury to the spine is indicated. Furthermore, he developed and read the roentgenograms immediately after he took them and made the positive statement "Well, this confirms the doctor's diagnosis. There are no bones broken." It must therefore be assumed that the pictures were taken as a diagnostic aid and that if Joyant had discovered that the plaintiff's back was broken he would have made known that fact so that further attention could have been given to the injury. The court concluded therefore that the evidence produced at the trial amply supported the jury's verdict that Joyant was negligent and that such negligence was the proximate cause of damages to the plaintiff. Accordingly the judgment in favor of the plaintiff was affirmed.—*Stanhope v. Los Angeles College of Chiropractic, 128 P. (2d) 705 (Calif., 1942).*

Evidence: Results of Blood Grouping Tests Held Admissible in Rape Case.—From a conviction for rape the defendant appealed to the Court of Appeals of Maryland.

The evidence showed that the prosecuting witness, about 2 o'clock one morning, was seized by some one, beaten, carried into a vacant yard, kept there for some time, criminally assaulted twice and then permitted to leave. The defendant was arrested the following morning, police having discovered that he had been in the neighborhood of the crime. At the time of his arrest, a blood stained overcoat was found in his room. He said these blood stains were the result of a fight he had had with a colored girl named Elizabeth Moore. She was questioned by the police in the defendant's presence and admitted that she had been in a fight with him, as the result of which defendant had given her a bloody nose. Defendant did not say whether the blood on his coat came from the scratches on his own face or from the nose of the colored girl. Defendant was identified by the prosecuting witness as the man who had assaulted her. A motorman on a street car said he, the morning of the assault, noticed that the defendant's face was scratched and that he had blood on his overcoat. The clothes of the prosecuting witness had blood on them which she testified had not been there before the attack, and a doctor who examined her on the morning of the attack testified that she was bleeding at that time. A police sergeant found blood on the snow in the yard in which the offense had been committed and also saw the prosecuting witness with blood running into her eyes. The bloody coat of the accused was offered in evidence.

During the course of the trial, evidence was offered of the results of various blood tests, taken by Dr. Freimuth, a toxicologist attached to the office of the chief medical examiner of the state and former toxicologist and serologist of the Federal Bureau of Investigation in Washington. No objection was made to the qualification of Dr. Freimuth, but the admission in evidence of the result of these tests was objected to and constitutes the basis for this appeal.

Scientific tests of human blood, said the court, are now almost universally used in appropriate cases and the results are accepted as evidence where they are found to be admissible for the purpose offered in a particular legal proceeding. The possibilities were first brought to the attention of the medical world when Dr. Karl Landsteiner, afterward a Nobel prize winner, announced in 1900 the result of his experiments showing that all persons, without regard to race, sex or health, could be divided into three blood groups (later increased to four). Other discoveries were made later, and the blood tests now given are generally known as the Landsteiner-Wiener, Landsteiner-Levine or Landsteiner-Bernstein tests. These tests have been recognized by the courts in Europe since 1924, their chief use being in paternity cases. In Germany they had been used in over 5,000 cases by 1929, and in Great Britain they were used in two murder cases as early as 1930 and 1931. The first case in this country seems to have been in 1931. In the early cases evidence of the tests was not admitted, because the courts here were not convinced of their general acceptance and reliability. Blood tests are now accepted everywhere as scientifically accurate, and the courts and legislatures have generally followed the same view. Trial courts in this state have so accepted them for a number of years. Dr. Freimuth testified that there are in the main four major blood groups in the international system of grouping. They are group O, in which you will find approximately 45 per cent of the population; group A, in which you will find approximately 42 per cent of the population; group B, in which you will find approximately 10 per cent of the population, and group AB, in which you will find the remaining 3 per cent. For the purpose of testifying in this case Dr. Freimuth made five separate blood tests, which showed as follows:

Blood from coat of accused, type O.

Blood from Elizabeth Moore, the colored girl with whom the accused had a fight, type A.

Blood from the prosecuting witness, type O.

Blood from clothes of prosecuting witness, type O.

Blood from the snow found in the yard, type O.

The defendant argued that the testimony of Dr. Freimuth with respect to the blood found on the coat of the defendant should have been excluded because it violated the constitutional right of a defendant to refuse to testify against himself. It is difficult to say how this contention can be sustained, said the court. Clothing is admissible in evidence if it is so connected with a crime as to throw light on a material inquiry in the case. The defendant attempted to rely on a case in which the court had refused to require the accused to try on a hat found at the scene of the crime. The court said there is a distinction between experiments made by the accused in court and experiments made outside of court and testified to by other witnesses.

> The difference is this, . . . that when such comparisons and experiments are made outside of court, the evidence thereto falls from the lips of witnesses other than the defendant. The production of such evidence, therefore, and the testimony thereto, is not that of the defendant but of other witnesses; while, on the other hand, if the defendant is required against his objection in open court, in the presence of the jury, to make such experiments and comparisons, no extraneous evidence is required, and the constitutional prohibition is thereby violated.

In the case at bar the defendant did not testify. The blood was taken from his coat, and the evidence as to it was produced by another witness. We can find no justification for his contention that his constitutional rights were violated in this respect.

The judgment and sentence of the defendant was therefore affirmed.—*Shanks v. State, 45 A. (2d) 85 (Md., 1945).*

Medical Examinations and Licensure

COMING EXAMINATIONS AND MEETINGS

BOARDS OF MEDICAL EXAMINERS
BOARDS OF EXAMINERS IN THE BASIC SCIENCES

Examinations of the boards of medical examiners and boards of examiners in the basic sciences were published in The Journal, March 20, page 1189.

NATIONAL BOARD OF MEDICAL EXAMINERS

National Board of Medical Examiners: Parts I and II. Various Centers. May 6-8. Exec. Sec., Mr. E. S. Elwood, 225 S. Fifteenth St., Philadelphia 2.

EXAMINING BOARDS IN SPECIALTIES

American Board of Anesthesiology: *Oral.* New York, Oct. 9-14. Sec., Dr. Paul M. Wood, 745 Fifth Ave., New York 22.

American Board of Internal Medicine: *Written.* Oct. 21. Final date for filing application is July 1. Asst. Sec., Dr. W. A. Werrell, 1 W. Main St., Madison 3, Wis.

American Board of Obstetrics and Gynecology: *Oral.* Chicago, May 6-11. Sec., Dr. Paul Titus, 1015 Highland Bldg., Pittsburgh.

American Board of Ophthalmology: *Oral. All Groups. Parts I and II.* New York, June 1947. Final date for filing application is Dec. 1. Chicago, October 1947. Final date for filing application is March 1. Sec., Dr. S. J. Beach, 56 Ivie Rd., Cape Cottage, Me.

American Board of Orthopaedic Surgery: *Part II. Oral.* Chicago, January. Final date for filing application is Nov. 1. Sec., Dr. Guy A. Caldwell, 1136 W. Sixth St., Los Angeles 14.

American Board of Otolaryngology: Chicago, May 22-25. Sec., Dr. Dean M. Lierle, University Hospital, Iowa City, Ia.

American Board of Pathology: San Francisco, June 25-26. Applications should be submitted by May 15. Sec., Dr. F. W. Hartman, Henry Ford Hospital, Detroit 2.

American Board of Pediatrics: *Oral.* Cleveland, April 27-28 and San Francisco, July 1-5. Sec., Dr. Lee F. Hill, 3309 Forest Ave., Des Moines, Ia.

American Board of Psychiatry & Neurology: New York, December. Final date for filing application is Sept. 30. Sec., Dr. Walter Freeman, 1028 Connecticut Ave. N.W., Washington, D. C.

American Board of Radiology: Chicago, Nov. 27 to Dec. 1. Final date for filing application is Sept. 1. Sec., Dr. B. R. Kirklin, Mayo Clinic, Rochester, Minn.

American Board of Surgery: *Written. Part I.* Various centers, October. Final date for filing application is July 1. Sec., Dr. J. S. Rodman, 225 S. 15th St., Philadelphia 2.

American Board of Urology: *Oral.* Chicago, February 1947. Final date for filing application is Nov. 15. Sec., Dr. Gilbert J. Thomas, 1409 Willow St., Minneapolis 4.

Current Medical Literature

AMERICAN

The Association library lends periodicals to members of the Association and to individual subscribers in continental United States and Canada for a period of three days Three journals may be borrowed at a time. Periodicals are available from 1936 to date. Requests for issues of earlier date cannot be filled. Requests should be accompanied with stamps to cover postage (6 cents if one and 18 cents if three periodicals are requested). Periodicals published by the American Medical Association are not available for lending but can be supplied on purchase order. Reprints as a rule are the property of authors and can be obtained for permanent possession only from them

Titles marked with an asterisk (*) are abstracted below.

Alabama State Medical Assn. Journal, Montgomery

15:201-228 (Jan.) 1946

Surgical Treatment of Inguinal Hernia W. C Simpson—p 201
Evaluation of Various Case Finding Procedures in Tuberculosis Control Program W. Grosfeld—p 204
Further Data on Pathogenesis of Fibroblastic Neoplasms. Density Ratio of Tissue Computed by Author's Exposure Meter Method W. Marshall—p. 206
Lipoid Nephrosis Review of Disease, with Report of Case E A Harris and M. G. Neely.—p 208.

15:229-252 (Feb.) 1946

Consideration of Patient and His Disease Five Case Reports E. Dice Lineberry.—p 229
Intravenous Fluids F H Craddock Jr.—p. 234.
Thiouracil. E. Drennen—p 236
Clinical Use of Diuretics R. O Russell—p 237.

American Journal of Medical Sciences, Philadelphia

211:1-128 (Jan.) 1946

*Prefrontal Lobotomy: Survey of 331 Cases. W. Freeman and J. W. Watts—p 1.
Scrub Typhus Fever (Tsutsugamushi Disease) in New Guinea: Report of 75 Cases T. H. Mendell—p. 9
Clinical Significance of Cold Hemagglutinins L E Young—p. 23
Clinical Arrest in Enterococcal Endocarditis. W J MacNeal, Anne Blevins and C A. Poindexter.—p 40
Use of "Modified Globin" from Human Erythrocytes in Hypoproteinemias M. M Strumia, A D Blake, H C Reider and F W Chornock—p. 51.
Fatal Agranulocytosis, with Autopsy Following Use of Thiouracil in Case of Thyrotoxicosis A. Trasoff, M G. Wohl and S S Mintz. —p 62
Therapeutic Value of Early Physical Activity in Rheumatic Fever Preliminary Report. H F Robertson, R E Schmidt and W Feiring —p 67.
Relationship of Blood Pressure and Serum Thiocyanate W F Connell, G. K Wharton and C E Robinson—p 74
Palmar Erythema—Its Relationship to Protein Deficiency. R M Johnson and H. H. Hecht—p 79.
Simplified Apparatus for Induction of Artificial Pneumoperitoneum. B O Lewis—p 84
Occurrence of Fibrinolysis in Shock, with Observations on Prothrombin Time and Plasma Fibrinogen During Hemorrhagic Shock H J Tagnon, S M Levenson, C S. Davidson and F H L Taylor—p 88.
Observations on Specificity and Clinical Use of Dirofilaria Immitis Antigen in Diagnosis of Human Filariasis (Wuchereria Bancrofti). M Zarrow and H. Rifkin—p 97
Treatment of Bacillary Dysentery in Chinese Soldiers with Sulfaguanidine and Sulfadiazine. K. A. Elsom, D. S Pepper and J. S Forrester. —p. 103
Infectious Polyneuritis (Guillain Barre Syndrome) R. L Pullen and W. A Sodeman—p 110.

Prefrontal Lobotomy.—Freeman and Watts performed prefrontal lobotomy in 331 cases during the last nine years. This surgical procedure is to be employed only in cases in which a favorable outcome is not to be anticipated under more conservative measures. It should not be postponed too long, however, since deterioration may progress to the point where operation will no longer be serviceable. The most favorable results are obtained in obsessive tension states, with or without compulsions, in hypochondriasis and intractable psychosomatic conditions and in agitated depressions Less satisfactory results are obtained in schizophrenias, although as long as the patient is fighting his disease there still remains the possibility of satisfactory modification of his disturbed behavior. Alcoholism, paranoid states and psychoses with organic brain diseases yield rather poor results. The treatment of structurally conditioned painful disorders is giving favorable results. The most important sequels are inertia, aggressiveness and epileptic seizures, but these are disabling in only a minor percentage of cases. About half the patients are usefully occupied, one fourth remain at home and one fourth are dead or institutionalized.

American Journal of Physiology, Baltimore

145:273-446 (Jan.) 1946. Partial Index

Thrombopenia of Anaphylactic and Peptone Shock. A. J. Quick, R K. Ota and I. D. Baronofsky—p 273.
*Role of Exercise in Altitude Pain. F M Henry—p 279.
Elimination of Administered Cobalt in Pancreatic Juice and Bile of Dog, as Measured with Its Radioactive Isotopes G E Sheline, I. L Chaikoff and M. L. Montgomery—p 285
Visual Thresholds as Index of Physiologic Imbalance During Insulin Hypoglycemia. R. A. McFarland, M. H. Halperin and J. I Niven —p 299.
Effects of Acute Hemorrhagic and Traumatic Shock on Renal Function of Dogs R. A. Phillips, V. P. Dole, P. B Hamilton and others, with technical assistance of Emily G. Stanley and W. H. Becker. —p 314
Renal Extraction of Oxygen in Experimental Shock V. P. Dole, K Emerson Jr., R. A Phillips, P. Hamilton and D. D Van Slyke —p 337.
Effect of Oxygen Pressure on Uptake of Carbon Monoxide by Man at Sea Level and at Altitude. J. L Lilienthal Jr. and Mary B Pine. —p 346
Relationships Between Carbon Monoxide, Oxygen and Hemoglobin in Blood of Man at Altitude. J. L. Lilienthal Jr., R. L Riley, D. D Proemmel and R. E. Franke—p 351.
Effect of Low Concentrations of Carboxyhemoglobin on "Altitude Tolerance" of Man. J. L Lilienthal Jr. and C. H Fugitt—p 359
Blood Sugar Levels and Carbohydrate Administration in Human Subjects During Prolonged Exposures to Moderately Low Altitudes S A D'Angelo—p 365
Comparison of Renal Clearances with Direct Renal Blood Flow Under Control Conditions and Following Renal Ischemia. E. E. Selkurt —p. 376.
Further Observations on Induced Ovulation in Mouse as Rapid Test for Pregnancy. H O. Burdick—p 387.
Energy Cost of Horizontal and Grade Walking on Motor Driven Treadmill. L Erickson, E. Simonson, H. L. Taylor, H. Alexander and A. Keys—p 391.
*Effect of Low and High Carbohydrate Meals on Blood Sugar Level and on Work Performance in Strenuous Exercise of Short Duration J. Haldi and W. Wynn—p 402
Effect of Diethylstilbestrol on Thyroidectomized Rats. R. G. Janes —p 411
Effect of Compounds Related to Glycolysis in Muscle on Sensitivity of Muscle to Acetylcholine and Potassium. Clara Torda and H. G Wolff—p 419.
Arterial Oxyhemoglobin Saturations at Critical Pressure Altitudes Breathing Various Mixtures of Oxygen and Nitrogen, with Note on Effect of Exercise J. L. Lilienthal Jr, R. L. Riley and D D. Proemmel—p 427.

Exercise in Altitude Pain.—Henry exposed healthy young men to a reduced barometric pressure of 155 mm, equivalent to an altitude of 38,000 feet, in a decompression chamber Pure oxygen was supplied so that alveolar oxygen was maintained at normal ground level tension While at the simulated altitude for ninety minutes, unless forced to return to ground level pressure sooner because of incapacitating symptoms, the men performed one or another of six arm exercises designed to separate out factors such as continuous and intermittent strain, total work and angular joint movement The presence and severity of pain (aviator's "bends") or other symptoms was recorded at intervals of two and a half minutes. Pain occurred in unexercised limbs but was much more common and more severe in exercised limbs. Onset time, incidence and severity of pain were systematically related to total work (in foot pounds). There is an indication that the occurrence of mild pain is differentially affected by small amounts of work but not further increased at the highest work level studied Muscle strain, mechanical tension and amount of joint movement did not determine the occurrence or severity of pain This is true for both continuous and intermittent tension These results support a theory that increased local carbon dioxide production is principally responsible for the effects of exercise on the occurrence and severity of altitude pain

Effect of Meals on Blood Sugar and Work Performance.—Haldi and Wynn made blood sugar determinations on finger tip blood of 59 normal healthy young adults two and a half to three hours after a low and a high carbohydrate breakfast containing approximately 400 calories. There was no appreciable difference in the blood sugar level after the two types of meals. Blood samples were obtained by the same procedure on 50 subjects one, two and three hours after a low and a high carbohydrate breakfast containing approximately 600 calories (50 per cent more calories than the breakfast ingested in the preceding experiments). On 38 additional subjects venous and finger tip blood was drawn simultaneously. The average blood sugar (arterial and venous) was within the normal range. In a few instances the sugar concentration of venous blood fell below 70 mg. per hundred cubic centimeters, but these low values, which are regarded as normal deviations, occurred in about equal frequency after the low and the high carbohydrate meals. There was no relationship between the blood sugar level and the sense of hunger and weakness. The performance of swimmers in a hundred yard sprint was the same two and a half to three hours after a high carbohydrate meal and an isocaloric meal containing a low percentage of carbohydrate. There was no difference in the blood sugar level two and a half to three hours after these low and high carbohydrate meals. Immediately after swimming, the blood sugar concentration was higher than before swimming but was the same on the two types of meals. A high carbohydrate meal is not conducive to hypoglycemia and its usual symptoms of hunger, weakness and fatigue several hours later in normal, healthy persons. It is concluded that the hypoglycemia syndrome that is relieved by restriction of the carbohydrate intake is a pathologic condition and not a normal physiologic response to a high carbohydrate meal.

Archives of Internal Medicine, Chicago

76:257-404 (Nov.-Dec.) 1945

*Acute Myocarditis in Mumps (Epidemic Parotitis). D. H. Rosenberg. —p. 257.
Pneumothorax in Young Adult Males: Descriptive Statistics in 126 Cases. J. E. Leach.—p. 264.
Streptomycin for Certain Systemic Infections and Its Effect on Urinary and Fecal Flora. H. A. Reimann, A. H. Price and W. F. Elias. —p. 269.
Hemolytic Streptococcus Sore Throat: Detailed Study of Simultaneous Infection of Large Number of Men by Single Type. L. A. Rantz, W. W. Spink and P. J. Boisvert.—p. 278.
Small Adenomas of Adrenal Cortex in Hypertension and Diabetes. S. Russi, H. T. Blumenthal and S. H. Gray.—p. 284.
Paroxysmal Hemoglobinuria Due to Cold Hemolysin: Observations with Report of Case of Its Occurrence in Aerial Gunner. E. D. Maire. —p. 292.
Congenital Idiopathic Methemoglobinemia: Favorable Response to Ascorbic Acid Therapy. R. F. Sievers and J. B. Ryon.—p. 299.
Study of Water and Heat Loss from Respiratory Tract of Man: Methods: I. Gravimetric Method for Measurement of Rate of Water Loss; II. Quantitative Method for Measurement of Rate of Heat Loss. G. E. Burch.—p. 308.
Rate of Water and Heat Loss from Respiratory Tract of Normal Subjects in Subtropical Climate. G. E. Burch.—p. 315.
Observations on Primary Atypical Pneumonia. J. Grossman.—p. 328.
Acute Porphyria: Clinical and Pathologic Observations. M. Berg. —p. 335.
Relation of Nutritional Deficiency to Cardiac Dysfunction. M. M. Wintrobe.—p. 341.
*Extragenital Chorionepithelioma in Male. H. M. Chernoff, T. S. Evans and C. J. Bartlett.—p. 347.
Plasma Quinacrine Concentration in Treatment of Plasmodium Vivax Malaria Acquired in South Pacific. L. D. Ellerbrook, S. W. Lippincott, C. F. Cateno, H. H. Gordon and A. Marble.—p. 352.
Blood: Review of Recent Literature. F. H. Bethell, C. C. Sturgis, R. W. Rundles and Muriel C. Meyers.—p. 358.

Acute Myocarditis in Mumps.—Rosenberg observed a complete heart block in a sailor, aged 20, who was convalescing from epidemic parotitis. Diagnosis of acute myocarditis was made from the electrocardiographic changes, and, in the absence of any other etiologic agent, the condition was ascribed to the virus of mumps. Another patient was observed who during the course of mumps manifested electrocardiographic evidence of partial heart block which progressed to complete heart block and ultimately returned to normal. In 104 consecutive cases of mumps in adults, electrocardiographic evidence of myocardial involvement was found in 16 instances (15.4 per cent). Mumps myocarditis appears as a rule between the fifth and tenth days of illness and is usually mild and transitory. In the majority of instances it follows a subclinical course and is recognizable chiefly, if not exclusively, by electrocardiographic studies. Precordial pain, dyspnea and/or palpitation appeared in 4 cases of this series and in the 2 reported in this paper. The author suggests that perhaps too much emphasis is attached to the delayed conduction time in the differential diagnosis of rheumatic fever. Other acute infections that are prevalent in epidemic form when the incidence of rheumatic fever is at its peak, such as pneumonia, diphtheria and German measles, were also found with electrocardiographic abnormalities, including a prolonged PR interval. The author also suggests that epidemic parotitis is a generalized infection and that any acute infectious disease, bacterial or viral in origin, is capable of affecting the heart.

Extragenital Chorionepithelioma in the Male.—Chernoff and his associates report the history of a man, aged 30, who had gynecomastia, pain in the lumbar region, hemoptysis, loss of weight and a rapid downhill course. The production by the tumor of large amounts of gonadotropic hormone was demonstrated by the highly positive reaction to the Friedman test with both urine and spinal fluid. The enlargement of the breasts, the absence of spermatogenesis and the interstitial hyperplasia noted in the testis are considered to have been produced by the excessive amounts of this hormone. Intensive roentgen therapy over a period of five months did not alter the outcome, although it did produce some symptomatic relief and some decrease in the size of the pulmonary metastases.

Archives of Pathology, Chicago

41:1-120 (Jan.) 1946

Absorption of Scar Tissue in Experimental Nodular Cirrhosis of Liver, with Method of Visualizing Cirrhotic Changes. B. Steinberg and Ruth A. Martin.—p. 1.
Microscopic Lesions in Acetylcholine Shock. R. Altschul and M. M. Laskin.—p. 11.
*Relation of Cholelithiasis to Acute Hemorrhagic Pancreatitis. D. W. Molander and E. T. Bell.—p. 17.
Experimental Pituitary Diabetes of Five Years' Duration with Glomerulosclerosis. F. D. W. Lukens and F. C. Dohan.—p. 19.
Morphologic Studies of Rats Deprived of Essential Amino Acids: III. Histidine. M. E. Maun, W. M. Cahill and Ruth M. Davis.—p. 25.
Occurrence of Rheumatic Carditis in Native Population of Curaçao, Netherlands West Indies. P. H. Hartz and Ary van der Sar.—p. 32.
Fat Necrosis Studies: VI. Effect of Feeding Lipase-Containing Vegetable Seed on Production of Fat Necrosis. M. P. Neal.—p. 37.
Experimental Nephropathies: IV. Glycosuria in Dogs Poisoned with Uranyl Nitrate, Mercury Bichloride and Potassium Dichromate. O. E. Hepler and J. P. Simonds.—p. 42.
Leukopenia and Inflammation: Presence of Leukopenic Factor in Inflammatory Exudates. V. Menkin.—p. 50.
Tropical Diseases: Involvement of Nervous System. W. S. Chalgren and A. B. Baker.—p. 66.

Cholelithiasis and Acute Hemorrhagic Pancreatitis.—According to Molander and Bell, necropsy records of the department of pathology of the University of Minnesota show acute hemorrhagic pancreatitis encountered in 158 of 41,333 persons examined post mortem. The frequency of cholelithiasis associated with acute pancreatitis in the necropsy series is shown along with Ludlow's report of the occurrence of cholelithiasis in 4,800 persons examined post mortem. Cholelithiasis is observed much oftener in necropsies on persons with acute pancreatitis than in necropsies on people in general. In about two thirds of the males and one third of the females with acute pancreatitis this disease develops in the absence of gallstones, but since gallstones are found about six times as frequently in both males and females with acute pancreatitis as in the necropsy population in general there must be some causal relation between the two findings.

Bulletin of Los Angeles Neurological Society

10:85-180 (Sept.-Dec.) 1945

*Chronic Pain as Residual of Poliomyelitis of Southern California. J. M. Nielsen.—p. 85.
Iron Encrustation of Nerve Cells in Vicinity of Old Traumatic Lesions of Cerebral Cortex. C. W. Rand and C. B. Courville.—p. 95.
Successful Treatment of Posttraumatic Pneumococcic Meningitis with Large Doses of Penicillin. K. H. Abbott and P. J. Vogel.—p. 107.
Intracranial Complications of Infections of Nasal Air Passages and Accessory Sinuses: Further Report on Nature and Incidence of Lesions Observed in Series of 30,000 Autopsies. W. W. H. Pote Jr. and C. B. Courville.—p. 114.
Notes on Pathology of Cranial Tumors: II. Metastatic Tumors of Calvarium with Incidental Reference to Their Occurrence in American Aborigines. C. B. Courville and K. H. Abbott.—p. 129.
Ancestry of Neuropathology: Robert Hooper's "Morbid Anatomy of Human Brain." C. B. Courville.—p. 155.
Palmomental Sign. G. N. Thompson.—p. 174.
Desire to Sing as Aura of Epilepsy: Case Report. H. Tompkins.—p. 176.

Chronic Pain as Residual of Poliomyelitis.—Nielsen observed a new syndrome of chronic pain as a residual of polyneuritic poliomyelitis in 15 cases in southern California. Reports of 6 are presented. The condition is characterized by neuritic and radicular pains, acroparesthesias and a myotonic syndrome-like myotonia congenita. After a subacute onset of pains the course becomes chronic and continues for years with exacerbations and remissions, possibly with a slow downward course. The sharp, shooting pains are almost exactly like those of tabes dorsalis. They affect not only the extremities but also the roots of the trunk and those supplying the trigeminal area. The pains differ from those of tabes in that they do not leave areas of hyperesthesia unless they become almost constant and then late in the disease. Then large areas are extremely sensitive to light touch but not to heavy pressure. All symptoms of destruction are extremely rare; the syndrome is almost exclusively irritative. The distribution of the gripping pains is that of the peripheral nerves. The acroparesthesias, the typical numbness of the hands and feet, are exactly like those of any sensory polyneuritis. The muscle spasms and myotonic syndrome seem related not to any circulatory deficiency but rather to the muscles themselves or to their nervous supply. But the anomalous condition exists that there is no tenderness of the nerve trunks or of the muscles in which the supposedly affected nerve endings are located, unless the muscles are forced to contract many times by voluntary use. After such exercise there is much spontaneous pain in the group and a burning pain referred to the overlying skin. So far as known, the syndrome does not respond to any treatment.

Journal of Bacteriology, Baltimore

50:613-728 (Dec.) 1945. Partial Index

Influence of Streptomycin and Streptothricin on Intestinal Flora of Mice. Dorothy G. Smith and H. J. Robinson.—p. 613.

Broth Dilution Method of Assaying Streptothricin and Streptomycin. R. Donovick, Dorothy Hamre, F. Kavanagh and G. Rake.—p. 623.

Dehydrogenase Characteristics of Pneumococci. L. L. Bambas.—p. 629.

*In Vitro and In Vivo Activity of Streptomycin Against Hemophilus Pertussis. C. P. Hegarty, Elizabeth Thiele and W. F. Verwey.—p. 651.

Diphtherial Toxoid Purified by Absorption. I. A. Parfentjev and M. A. Goodline.—p. 661.

Isolation of Four Salmonella Types from One Carrier. A. P. Juenker. —p. 673.

Structure of Spirocheta Novyi as Revealed by Electron Microscope. Ruth Lofgren and M. H. Soule.—p. 679.

Decomposition of Tartrates by Some Common Fungi. Thressa C. Stadtman, R. H Vaughn and G. L. Marsh.—p. 691.

Assay of Streptomycin by Paper Disk Plate Method. Y. H. Loo, P. S. Skell and H. H. Thornberry, J. Ehrlich and others.—p. 701.

Sources of Amylase-Producing Bacteria. G. L. Peltier and L. D. Beckord.—p. 711.

Streptomycin Against Hemophilus Pertussis.—Hegarty and his associates found that streptomycin exhibited in vitro bacteriostatic activity against Hemophilus pertussis at a concentration of 3 micrograms per cubic centimeter and was bactericidal at 15 micrograms per cubic centimeter. Infection of mice with 40,000 organisms and treatment with 0.5 mg. of streptomycin per day for five days resulted in an average survival time approximately twice that of the controls but an ultimate mortality of 90 per cent of the animals. Infection with 5,000 organisms and daily treatment with 2 mg. of streptomycin for ten days protected 50 per cent of the mice. The mean survival time for those that died was twenty-two days as compared with 5.5 days for the controls. Further investigations of the use of streptomycin in the therapy of H. pertussis infection are suggested.

Journal of Clin. Endocrinology, Springfield, Ill.

5:407-456 (Dec.) 1945

*Further Observations on Value of Pregnandiol Test for Pregnancy. H. S. Guterman.—p. 407.

Testosterone Propionate in Treatment of Senile Pruritus. W. L. Dobes, J. Jones and A. G. Franks.—p. 412.

Reliability of Aschheim-Zondek Test in Pregnancy: Report of Two Thousand Routine Tests. J. Engelfried, Gladys E. Hawkinson and Vera F. Galandey.—p. 419.

Thiouracil Derivatives of Greater Activity for Treatment of Hyperthyroidism. E. B. Astwood and W. P. VanderLaan.—p. 424.

Pregnandiol Test for Pregnancy.—Guterman reports the results of the pregnandiol color reaction test for pregnancy in 248 obstetric cases with an accuracy of 92 per cent. The accepted Friedman test was recorded as 87 per cent correct in this same series. The standard for a "positive" reaction has been altered to a deep yellow which avoids "false negative" results and does not increase the incidence of "false positives." The infrequency of the occurrence of proved corpus luteum cysts is indicated. It does not therefore affect the accuracy of this pregnancy test. Patients with hydatid moles and chorionic neoplasms do not excrete sufficient pregnandiol to give a "positive" reaction. Since six tests can be performed simultaneously in three hours, the time devoted to each test is half an hour. This is less time than has been found necessary to devote to an individual Friedman test.

Journal of Neurophysiology, Springfield, Ill.

9:1-60 (Jan.) 1946

Reflex Pupillodilator Mechanisms: An Experimental Analysis. A. Kuntz and C. A. Richnins.—p. 1.

Effects of Inhibitors of Choline Esterase on Nerve Action Potential. T. H. Bullock, D. Nachmansohn and M. A. Rothenberg.—p. 9.

Mechanism of Electrophonic Effect. P. Kellaway.—p. 23.

Rapid Changes in Cerebral Oxygen Tension Induced by Altering Oxygenation and Circulation of Blood. E. Roseman, C. W. Goodwin and W. S. McCulloch.—p. 33.

Carbonic Anhydrase in Nervous System. H. W. Davenport.—p. 41.

Effect of Cellular Hydration on Experimental Electroshock Convulsions. E. A. Swinyard, J. E. P. Toman and L. S. Goodman.—p. 47.

Recovery of Motor Function After Two-Stage Extirpation of Area 4 in Monkeys (Macaca Mulatta). H. W. Ades and D. H. Raab.—p. 55.

Journal of Nutrition, Philadelphia

31:1-140 (Jan.) 1946

Determination of Metabolic Fecal Nitrogen and Protein Digestibility. D. K. Bosshardt and R. H. Barnes.—p. 13.

Use of Mice for Measurement of Growth Promoting Quality of Proteins. D. K. Bosshardt, Laura C. Ydse, Mary M. Ayres and R. H. Barnes. —p. 23.

Energy and Gaseous Metabolism of Chicken from Hatch to Maturity as Affected by Temperature. H. G. Barott and Emma M. Pringle. —p. 35.

Thiamine, Riboflavin, Nicotinic Acid and Pantothenic Acid Content of Colostrum and Milk of Cow and Ewe. P. B. Pearson and A. L. Darnell.—p. 51.

Vegetable Crops in Relation to Soil Fertility: IV. Nutritional Values of New Zealand Spinach. S. H. Wittwer.—p. 59.

Relation of Vitamin A Intake to Length of Life, Growth, Tooth Structure and Eye Condition. H. E. Paul and Mary F. Paul.—p. 67.

Nicotinic Acid Deficiency in Turkey Poults and Occurrence of Perosis. G. M. Briggs.—p. 79.

Factors Affecting Dietary Niacin and Tryptophan Requirement of Growing Rat. W. A. Krehl, P. S. Sarma, L. J. Teply and C. A. Elvehjem.—p. 85.

Relation of Amount of Thiamine in Ration of Hog to Thiamine and Riboflavin Content of Tissue. W. W. Heinemann, M. E. Ensminger, T. J. Cunha and E. C. McCulloch.—p. 107.

Further Studies on Calcium Requirement of Preschool Children. Dorothy Sheldon McLean, Gladys Kinsman Lewis, Elizabeth Jensen and others. —p. 127.

Journal of Urology, Baltimore

55:1-42 (Jan.) 1946. Partial Index

Report of Case of Acute Hemorrhagic Adrenalitis. V. J. Oddo.—p. 1.

*Relief of Renal Colic and Renal Suppression: Preliminary Report. I. R. Trimble and M. C. Sanford.—p. 4.

Pyelographic Sign in Diagnosis of Perinephric Abscess. D. T. Prehn. —p. 8.

Renal Adenomas in Hypernephromatous Kidneys: Study of Their Incidence, Nature and Relationship. D. S. Cristol, J. R. McDonald and J. L. Emmett.—p. 18.

Liposarcoma of Kidney: Report of Case Presenting Unusual Syndrome. G. W. Fish and W. L. McLaughlin.—p. 28.

Mucinous Adenocarcinoma of Pelvis of Kidney. L. V. Ackerman.—p. 36.

Ureteropelvic Obstructions in Children: Incidence and Etiology. P. J. Soley.—p. 46.

Circumcaval Ureter: Report of Case, with Consideration of Preoperative Diagnosis and Successful Plastic Repair. L. F. Greene and W. M. Kearns.—p. 52.

Unusual Ureteral Anomalies: Case Reports. E. F. Nation.—p. 60.

Congenital Diverticulum of Female Urethra. S. McMahon.—p. 69.

Study of Effect of Stilbestrol Therapy on Size of Benignly Hypertrophied Prostate Gland. E. L. Peirson.—p. 73.

Importance of Routine Cystoscopy in Prostatism. J. A. Lazarus.—p. 79.

Osteitis Pubis. H. H. Cohen.—p. 84.

Urogenital Complications of Dengue Fever. H. M. Weyrauch and H. Gass.—p. 90.

War Injuries of Urinary Tract. G. C. Prather.—p. 94.

Urogenital Wounds in Evacuation Hospital. D. F. Marshall—p. 119.

Penicillin in Propylene Glycol: Preliminary Report. F. L. Senger, H. L. Warres and I. Rifkin.—p. 138.

Relief of Renal Colic and Renal Suppression.—Trimble and Sanford report a case in which bilateral renal colic and anuria developed during sulfadiazine therapy. The colic was relieved within ten minutes after procaine hydrochloride injection of the lumbar sympathetic nerve trunk; the anuria of forty-eight hours' duration was terminated two hours following the first injection. In a second patient with renal colic due to a ureteral stone the same procedure was followed by temporary relief of pain and by the passage of the stone. The authors believe that renal colic can be completely, even though temporarily, relieved by sympathetic trunk injection and that a sympathetic trunk block is indicated in certain types of anuria.

Tennessee State Medical Assn. Journal, Nashville

39:1-36 (Jan.) 1946

Common Macrocytic Anemias. H. C. Long.—p. 1.
Toxic Psychosis Due to Bromides. F. F. Dupree.—p. 4.
Problem of Hypertension. A. Weinstein.—p. 8.
Rabies. T. L. Chiffelle.—p. 14.

39:37-76 (Feb.) 1946

Report of House of Delegates of American Medical Association. E. G. Wood.—p. 37.
The Doctor and His Medical Society. H. Acuff.—p. 41.
Diagnosis and Treatment of Common Anorectal Diseases. O. C. Gass.—p. 45.
Errors Commonly Encountered in Cardiac Diagnosis in Military Personnel T. F. Frist.—p. 51.

War Medicine, Chicago

8:283-448 (Nov.-Dec.) 1945

Public Health in France from Invasion to Liberation. L. J. Besançon.—p. 283.
War Injuries of Eyes and Visual Pathways. G. C. Struble and A. J. Kreft.—p. 290.
*Quinacrine Hydrochloride as Malaria-Suppressive Agent for Combat Troops. G. G. Duncan.—p. 305.
Experiences with Amebiasis in Evacuation Hospital. A. G. Brown.—p. 319.
Nutritional Disease in Cabanatuan. M. M. Musselman.—p. 325.
*Problem of Hemolytic Streptococcus Carriers in Hospital Personnel. F. F. Harrison and J. K. Miller.—p. 333.
Psychiatric Program for Naval Receiving Station. J. B. Dynes, N. Norton Springer and F. H. Thomas.—p. 337.
Psychiatric Casualties in Combat. H. H. Garner.—p. 343.
Reactive Depression: Study of 100 Consecutive Cases. H. J. Myers and S. Von Koch.—p. 358.
Psychogenic Disorders of Upper Gastrointestinal Tract in Combat Personnel. E. A. Weinstein and M. H. Stein.—p. 365.
Disease and Defects in Aircrew Trainees: Visual System. O. M. Marchman Jr.—p. 371.
Early Treatment of Open Head Wounds. J. F. Grunnagle.—p. 376.
Familial Periodic Paralysis: Report on Father and Son in World Wars I and II. J. W. Johnson Jr.—p. 382.
Histamine Flare in Evaluation of Peripheral Nerve Lesions. B. Tolnick and W. C. Beck.—p. 386.
Types of Shigella Isolated from Military Personnel in North Africa. C. C. Randall and H. O. Dunn.—p. 389.

Quinacrine Hydrochloride as Malaria-Suppressive Agent.—According to Duncan, quinacrine hydrochloride in doses of 0.1 Gm. daily, six days a week, secures average concentrations in the plasma of 22 micrograms per liter. These concentrations protect subjects against acute attacks of malaria, but they are an irreducible minimum for safety. The omission of an occasional dose permits a clinical attack of malaria to develop in personnel infected with Plasmodium vivax malaria. In the search for the optimum dosage of quinacrine hydrochloride it was observed that 0.5 Gm. of the drug given twice a week was highly effective in suppressing malaria and gave highly protective plasma quinacrine levels. Equally satisfactory results were obtained with 0.4 Gm. twice weekly, whereas the same degree of protection was not offered by 0.3 Gm. of quinacrine hydrochloride given twice a week. Recurrent attacks of malaria reappeared from two to four weeks after the discontinuance of suppressive therapy and at a rate quite as high as that which had preceded a three month period of intensive suppression. When supervision of its daily administration is faithfully exercised, quinacrine hydrochloride in doses of 0.1 Gm. given daily for six days a week is a satisfactory malaria suppressive agent. Adequate supervision of the daily administration of the drug to troops in combat has proved to be impossible. Under these conditions 0.4 Gm. of quinacrine hydrochloride given twice weekly at three and four day intervals alternately provides the optimum dosage and reduces the need of supervised administration of the drug to a minimum.

Hemolytic Streptococcus Carriers in Hospital Personnel.—The bacterial flora of the throats of 44 subjects was observed during the winter and spring of 1944 and 1945. Four groups are differentiated. Those of the first were free from hemolytic streptococcus, whereas in the other three increasingly large numbers were found. Treatment of the hemolytic streptococcus carriers with sulfadiazine seemed to reduce the number of streptococci resident in the throats of carriers materially, but the streptococci reappear after the termination of therapy. A dangerous carrier state is reduced and perhaps controlled only as long as the sulfonamide compound is present in the blood. Harrison and Miller suggest the possibility of a greater efficacy of small doses of a sulfonamide administered over a longer period.

Yale Journal of Biology and Medicine, New Haven

18:77-128 (Dec.) 1945

Streptococcus Fecalis Bacteremia and Meningitis: Report of Case Cured with Penicillin. A. J. Geiger and L. Greenman.—p. 77.
Agglutination of Staphylococcus Aureus in Presence of Normal or Influenza Virus Infected Mouse Lung Filtrates and of Chorioallantoic Fluids. E. W. Shrigley.—p. 81.
Sturge-Weber Syndrome: Report of 3 Cases. H. C. Anderson.—p. 103.
Development of Amnion and Exocoelomic Membrane in Previllous Human Ovum. A. T. Hertig.—p. 107.
Relation Between Discharge Zone and Subliminal Fringe in Motoneuron Pool Supplied by Homogeneous Presynaptic Pathway. D. P. C. Lloyd.—p. 117.

18:129-226 (Jan.) 1946

Amateur in Medical History. I. Galdston.—p. 129.
Effects of Calcium Chloride and of Calcium Lactate Administered by Gavage. S. H. Durlacher, W. Harrison Jr. and D. C. Darrow.—p. 135.
Genetic Analysis of Induction of Tumors by Methylcholanthrene: XII. Effects of Selection Toward Resistance. L. C. Strong.—p. 145.
Pharmacologic Activity of Basic Alkyl Esters of Substituted Pyrrolidine Dicarboxylic Acids: I. Local Anesthetic Activity and Toxicity. N. K. Schaffer and T. A. Loomis.—p. 157.
Local Anesthetic Activity and Toxicity of DI-(Beta-Diethylaminoethyl) Ester of 1-Benzyl 2, 5-Dicarboxy Pyrrolidine. T. A. Loomis and Ruth Spielmeyer.—p. 165.
Pharmacologic Activity of Basic Alkyl Esters of Substituted Pyrrolidine Dicarboxylic Acids: II. Action on Intestine, Uterus and Blood Pressure. T. A. Loomis and N. K. Schaffer.—p. 171.
Taxonomic Studies on Enterococci. R. L. Kuehner.—p. 185.
Delayed Diagnosis in Tubal Abortion: Report of 2 Cases. M. S. Godfried.—p. 217.
*Streptomycin in Tuberculous Meningitis: Report of Its Use in One Year Old Infant. R. E. Cooke, D. L. Dunphy and F. G. Blake.—p. 221.

Streptomycin in Tuberculous Meningitis.—Cooke and his co-workers report that a girl aged 1 year with tuberculous meningitis gave a history of intimate exposure to tuberculosis. A pulmonary lesion and a positive tuberculin test were demonstrated. The cerebrospinal fluid showed characteristic chemical and cytologic changes. Smears showed many acid fast bacilli. Guinea pig inoculation produced the typical disease in five weeks, and the organisms were present in the lesions. Treatment with streptomycin began on the eighth hospital day. It was administered intramuscularly in an amount of 10,000 units in 1 cc. of isotonic solution of sodium chloride every two hours for the first week; 20,000 units was then given every two hours for thirty days. Because of lack of the drug, treatment was interrupted almost seven days. When therapy was resumed the dosage of 20,000 units every two hours was continued for an additional twenty-nine days. The total amount of streptomycin given by intramuscular administration was 15,049,000 units over a period of sixty-eight days. The initial daily amount of streptomycin given intrathecally was 1,000 units. This was gradually increased to 100,000 units by the fifteenth day of therapy. Two hundred thousand units in 5 cc. of isotonic solution of sodium chloride was given intraventricularly every other day commencing on the nineteenth day of treatment. Since the supply of streptomycin was becoming low the amount was decreased to 100,000 units. There was a lapse of nine days in intrathecal administration, but treatment was resumed with 200,000 units every other day over a period of twenty-nine days. The total amount of intrathecal streptomycin was 4,951,000 units. The infant thus received a total of 20,000,000 units by the combined routes. The progression of tuberculous meningitis was arrested during treatment with streptomycin. The symptoms have decreased further since cessation of treatment. There is evidence that intramuscular and intrathecal streptomycin favorably influenced the course of tuberculous meningitis in this patient. This is the first detailed report of the administration of streptomycin by the intrathecal route.

FOREIGN

An asterisk (*) before a title indicates that the article is abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Ophthalmology, London

30:1-64 (Jan.) 1946

Clinical Trial of Synthetic Mydriatic (Dimethylaminoethyl Benzilate Ethochloride). W. J. B. Riddell.—p. 1.
New Synthetic Mydriatic. I. Mann.—p. 8.
Ocular Findings in Tropical Typhus (Tsutsugamushi or Japanese River Fever). E. A. Donegan.—p. 11.
Types, Paper and Printing in Relation to Eyestrain. R. B. Fishenden.—p. 20.
Ophthalmic Treatment in the Field, 1943. G. C. Dansey-Browning.—p. 26.
Cavernous Hemangioma of Orbit Successfully Removed by Shugrue's Operation. M. Paul.—p. 35.
Analysis and Follow-Up of 301 Cases of Battle Casualty Injury to Eyes. G. I. Scott and I. C. Michaelson.—p. 42.

Lancet, London

1:77-112 (Jan. 19) 1946

*Bread. R. A. McCance.—p. 77.
Synergic Action of Penicillin and Sulfathiazole on Bacterium Typhosum. J. W. Bigger.—p. 81.
Hyperventilation Asthma. H. Herxheimer.—p. 83.
*Local Penicillin for Throat Infections. R. C. S. Meadley and H. F. Barnard.—p. 87.
*Human Pulmonary Tuberculosis Due to Avian Tubercle Bacilli: Report of Case. F. C. S. Bradbury and J. A. Young.—p. 89.
Control of Sonne Dysentery with Succinylsulfathiazole. R. L. Vollum and J. A. H. Wylie.—p. 91.
Dengue Group of Fevers in India. P. V. Karamchandani.—p. 92.
Gunshot Wound of Both Orbits: Report of Case. D. L. Charters.—p. 93.

Bread.—McCance points out that there are many substances of proved nutritional value in the outer endosperm and germ of the wheat grain. The inner endosperm is poor stuff nutritionally, and its poverty is enhanced by the fact that its protein is known to contain an unbalanced and incomplete mixture of amino acids. Experience and experiments with animals fully bear out this chemical evidence. A table shows what happens to the composition of flours as the extraction rates are lowered. Changes are due to the gradual removal of the bran, outer endosperm and germ. By 85 per cent extraction most of the bran has gone, and this has led to the big fall in minerals, but most of the germ and scutellum have been retained, with some of the outer endosperm. This has prevented serious fall in vitamin B_1 and has held up the concentration of iron and other vitamins. A big fall in vitamin B_1 occurs as the extraction falls from 85 to 75 per cent, because it is between these two extractions that the germ and scutellum are removed. The inclusion of bran in the flour lowers the utilizable calories of bread, so that raising the extraction rate indefinitely is not all pure gain. Up to 85 per cent the rate of utilization does not fall off much. Flour must in future conform to certain nutritional standards, and these shall be of the order of those contained in flours of 80 to 85 per cent extraction. Everything that we know about biology and nutrition is opposed to the practice of artificial enrichment. Synthetic vitamins and vitamin concentrates are expedients that cannot form the basis for sound nutrition. Good nutrition must be built on a foundation of an optimum diet of natural foodstuffs.

Local Penicillin for Throat Infections.—Meadley and Barnard report a study of the effectiveness of local therapy in cases of acute tonsillitis due to hemolytic streptococci or Vincent's angina. Twenty-seven patients were treated with a penicillin sulfathiazole snuff containing 1,000 units of penicillin per dose and 30 controls with gargles and throat sedatives. A more rapid relief of symptoms and a shorter period off duty was obtained in the penicillin treated cases, especially in those with Vincent's angina. Bacteriologically there was a significant improvement in both types of infection through use of the penicillin snuff. Two severe cases, one streptococcic and one of Vincent's angina, which did not respond to local penicillin rapidly improved on systemic penicillin.

Human Pulmonary Tuberculosis Due to Avian Tubercle Bacilli.—Bradbury and Young describe a case of pulmonary tuberculosis in a man aged 59 in whom the causal organism showed most of the criteria of an avian tubercle bacillus. The patient responded to avian tuberculin but not to human tuberculin.

Bruxelles-Médical, Brussels

26:1-52 (Jan. 13) 1946. Partial Index

Surgery of Splanchnic Nerve. J. Goethals-Borin.—p. 9.
*Study of Hypovitaminosis C in Aged Persons. M. L. Fastre and M. Geubel.—p. 24.

Hypovitaminosis C in Aged Persons.—Fastre and Geubel studied 216 persons (150 women and 66 men) between the ages of 60 and 85 who lived in an old people's asylum. Intradermal administration of $\frac{1}{60}$ cc. of a solution of 80 mg. of dichlorophenol-indophenol per hundred grams was performed. Saturation, maintenance and vitamin C deficiency were manifested in the time required by the ascorbic acid for the decolorization of the reduced indicator solution. Sixty-eight per cent of the women and 85.5 per cent of the men at the refectory, but 30 per cent of the women and 57 per cent of the men at the infirmary presented a vitamin C deficiency. This percentage of deficiency is higher than that usually presented by normal adults and may be explained by the fact that the aged persons eat less fruit and vegetables.

Arch. Argent. de Enf. del Ap. Digest., Buenos Aires

20:203-290 (May-June) 1945

Resection of Fundus in Treatment of Gastroduodenal Ulcer. O. Copello and E. Etala.—p. 203.
*Circumscribed Gastric Hypertrophy. A. J. Señorans and E. F. Lascano.—p. 214.
Diverticula of Colon, with Especial Reference to Acute Processes. I. Goñi Moreno and A. G. Russo.—p. 229.
Necator Americanus: Its Detection by Duodenal Tube in Case of Secondary Anemia. A. D. Cisneros and E. E. Pasqualis.—p. 256.

Circumscribed Gastric Hypertrophy.—Señorans and Lascano present the history of a patient who for a year had symptoms characteristic of ulcer. Pain was localized in the left hypochondrium. Gastric secretion was reduced in amount and low in hydrochloric acid content. The roentgenologic picture suggested a malignant tumor of the greater curvature. Gastroscopy revealed changes in the folds of the fundus and a gastritis. Physiologic studies have demonstrated that the pyloric (antral) mucosa secretes a hormone which stimulates the glands of the fundus. In the case under consideration there was atrophy in the antral region with almost total disappearance of the pyloric glands, which partly explains the achylia. Subtotal gastrectomy was performed when medical treatment proved ineffective and because of the possibility of malignant degeneration. The condition was diagnosed as chronic gastritis.

Revista Chilena de Pediatría, Santiago

16:1033-1112 (Nov.) 1945. Partial Index

Prognosis and Treatment of Tuberculosis in Preschool Child. A. Ariztía.—p. 1033.
*Penicillin in Gonococcic Vulvovaginitis in Young Girls. W. Bustamante E.—p. 1071.
*Cerebral Complications of Renal Diseases in Children. C. Pavez.—p. 1082.

Penicillin in Gonococcic Vulvovaginitis.—Bustamante E. reports good results from penicillin therapy in 6 cases of gonococcic vulvovaginitis in girls between the ages of 4 and 11 years. The disease previously was resistant to sulfonamide therapy. In 4 cases penicillin was administered intramuscularly every three hours in doses varying between 3,000 and 5,000 units for five consecutive days. In 2 cases in which the injections were administered for three consecutive days there was a recurrence. The treatment was repeated successfully. Permanent cures have resulted in all 6 cases up to six months after treatment.

Cerebral Complications of Renal Diseases in Children.—According to Pavez the most important neurologic symptoms of progressive chronic nephritis with hypertension in children are those indicating intracranial hypertension (acute headache, acute meningeal symptoms and either visual disorders or amaurosis). The neurologic symptoms subside with the improvement of the renal lesion, if the latter responds favorably to proper therapy. The differential diagnosis between nephritis and meningitis or cerebral tumor is of importance. The prognosis depends on the course of the renal disease. Two cases in children of 10 and 13 years respectively are reported.

Book Notices

Clinical Biochemistry. By Abraham Cantarow, M.D., Professor of Physiological Chemistry, Jefferson Medical College, Philadelphia, and Max Trumper, Ph.D., Lt. Commander, USNR, Naval Medical Research Institute, National Naval Medical Center, Bethesda, Md. Third edition. Cloth. Price, $6.50. Pp. 647, with 29 illustrations. Philadelphia & London: W. B. Saunders Company, 1945.

The first edition of this book by Trumper and Cantarow appeared in 1932 under the title Biochemistry in Internal Medicine. While biochemistry has been used more extensively in internal medicine than in any other specialty, its usefulness covers the whole field of medical practice. The present and more appropriate title of Clinical Biochemistry was employed for the second edition, which appeared in 1939. Despite the fact that considerable new material has been added in the present edition, this has been accomplished without increasing the size of the book owing chiefly to economies in resetting the type and to the omission of some laboratory methods.

Quite logically the first three chapters are devoted to carbohydrate, lipid and protein metabolism. These are followed by eight separate but relatively brief chapters covering the metabolism of calcium, inorganic phosphorus, magnesium, iron, sulfur, iodine, sodium, potassium, chloride and phosphatase activity. It would have been more in keeping with the plan of the earlier chapters to include these topics together in one chapter on mineral metabolism. The remaining chapters cover the topics of water balance, acid-base balance, respiratory exchange and basal metabolism, vitamins, diabetes mellitus, renal function, hepatic function, gastric function, pancreatic function, cerebrospinal fluid, pregnancy and lactation, hormone assay and endocrine function, and outlines of chemical abnormalities in various disorders.

In general the various topics are logically and clearly discussed, the relative emphasis being quite evenly balanced. The subject matter and presentation of hepatic function are excellent, and the same may be said of the new chapter on hormone assay and endocrine function. However, a few misleading statements made in the first edition and carried over to the present edition might be mentioned. On page 83 there appears the incorrect statement that "10-15 per cent of the caffeine is converted into uric acid." Concentration ratios of a number of urinary constituents are presented in tabular form on page 347 and further discussed on pages 362 and 365. Unfortunately the assumed blood and urine concentrations in several instances are incorrect, yielding much too low concentration ratios for creatinine and sulfate and too high a ratio for uric acid, thus changing the interpretation which might be placed on these ratios. It probably would have been more in accord with the apparent aims of the text if in the chapter on vitamins greater emphasis had been placed on vitamin deficiency states.

Many improvements are apparent in the present edition. The first edition did not include bibliographic data, but such references were introduced in the second edition and expanded in the present edition, thus making the book more helpful for those who wish to secure detailed information on special topics. The book will be found stimulating and useful both for students of medicine and for physicians who desire a concise and clear presentation of the practical aspects of biochemistry.

Oto-neuroligie: Technique et interprétation des examens labyrinthiques. Par Maurice Aubry, laryngologiste de l'Hôpital Bichat. Paper. Price, 200 francs. Pp. 328, with 48 illustrations. Paris: Masson et Cie, 1944.

It is amazing that such an exact and comprehensive work could be published while France was still in the throes of war. Like many other European books, this one is paper covered, but the entire setup is on excellent smooth finish, heavy duty paper printed in readable type. The author recognizes the importance of the aural labyrinth in the equilibrium of man and animals. Otologists have brought much of importance to neurology but have not done a great deal for otology itself. Otologic studies have helped to determine the vestibular function and its connection with pathways to and from the brain. These studies have stimulated neurologic research. The present volume is based on some fifteen years of work in the famous Salpêtrière Hospital, at the bedside, at surgical operation and at necropsy. All these considerations were dependent on a thorough knowledge of neuroanatomy and neurophysiology. All facts were integrated, and conclusions derived from them were as nearly logically correct as is humanly possible to make them. Not much is said of this same kind of work carried out in other countries, and the Germans especially receive little or no credit for the enormous contributions they have made, notably the Vienna school. In wartime this may have been necessary, but in peacetime we shall continue to hope that science has no frontiers. The book is divided into four parts: a study of the anatomy and physiology of the labyrinth and of the central vestibular pathways, technic of the otoneurologic examination, study of the principal central labyrinth signs and synthesis of the various vestibular syndromes. All these divisions are complete in every detail. The otologist or neurologist who can read French will profit greatly from a thorough perusal of this textbook.

Hematology for Students and Practitioners. By Willis M. Fowler, A.B., M.D., Professor of Internal Medicine, University of Iowa, Iowa City. With a chapter by Elmer L. DeGowin, A.B., M.D., Assistant Professor of Internal Medicine, University of Iowa. Cloth. Price, $8. Pp. 499, with 110 illustrations. New York & London: Paul B. Hoeber, Inc., 1945.

This book offers a comprehensive survey of the field of hematology. It is well outlined and makes easy reading but tends to gloss over or omit fine details. It is thus a good book for the student or practitioner but is less suitable for the specialist in hematology or the clinical pathologist. The chapter on blood transfusion is also well organized and easy to read but, like the section on hematology, it often deals in generalities. However, it would be difficult to cover the subject much more completely in a single chapter. It is unfortunate that so recent a book should omit recommendation or reference to the use of acid-citrate-dextrose solution, which is undoubtedly the best preservative available today for storage of whole blood.

Structure and Function of the Human Body. By Ralph N. Baillif, Ph.D., Assistant Professor of Anatomy, Louisiana State University School of Medicine, New Orleans, and Donald L. Kimmel, Ph.D., Associate Professor of Anatomy, Temple University School of Medicine, Philadelphia. Cloth. Price, $3. Pp. 328, with 286 illustrations. Philadelphia, London & Montreal: J. B. Lippincott Company, 1945.

This is intended as a textbook for an introductory course in human anatomy and physiology. Emphasis is on basic principles and on the relationship between structure and function rather than on factual detail. In an introductory chapter an integrating survey is made of the principal anatomic structures and physiologic processes, to acquaint the student with the field. In subsequent chapters the various organ systems are discussed in more detail, and the student is helped to a better understanding of the normal functioning of the organism by the inclusion of important clinical and pathologic data. The illustrations are good; the diagrammatic figures are particularly clarifying and well executed. The authors have successfully correlated morphologic material and functional aspects in an elementary textbook, so that the book achieves its purpose.

A Synopsis of the Diagnosis of the Surgical Diseases of the Abdomen. By John A. Hardy, B.Sc., M.D., F.A.C.S. Second edition. Fabrikoid. Price, $5. Pp. 528, with 100 illustrations. St. Louis: C. V. Mosby Company, 1945.

The general practitioner still sees most patients with abdominal complaints before the surgeon does. This book gives him an excellent work of reference. It covers the field thoroughly, including gynecologic and urologic disease, and contains the essentials necessary toward more complete and earlier diagnosis of intra-abdominal disease. Proper emphasis is placed on thorough history taking and physical examination of the patient, and laboratory aids to diagnosis are thoroughly covered and evaluated. The chapters devoted to the diagnosis of specific disease each contain discussions of etiology, pathology and diagnosis as well as history and physical examination. The new chapters on hypertension and hypoglycemia are interesting. Though this is only a synopsis and not meant to be a textbook, perhaps more emphasis and space should be given to differentiation of organic from functional disease, an ever increasingly important problem in the practice of medicine.

Queries and Minor Notes

THE ANSWERS HERE PUBLISHED HAVE BEEN PREPARED BY COMPETENT AUTHORITIES. THEY DO NOT, HOWEVER, REPRESENT THE OPINIONS OF ANY OFFICIAL BODIES UNLESS SPECIFICALLY STATED IN THE REPLY. ANONYMOUS COMMUNICATIONS AND QUERIES ON POSTAL CARDS WILL NOT BE NOTICED. EVERY LETTER MUST CONTAIN THE WRITER'S NAME AND ADDRESS, BUT THESE WILL BE OMITTED ON REQUEST.

STILLBIRTH AND THE Rh FACTOR

To the Editor:—A patient is now pregnant and gives a history of a stillbirth following an easy first labor one year ago. The patient is Rh positive; the patient's husband is Rh negative. Could this be the cause of stillbirth? If so are there any special procedures advisable in her coming labor except to have a suitable donor? What is the prognosis of her present pregnancy?

M.D., Oklahoma.

ANSWER.—The suggestion that isoimmunization in pregnancy might be the cause of this patient's stillbirth does not seem plausible on clinical grounds, because this mechanism would not ordinarily produce a stillbirth at the first pregnancy unless the patient had been previously sensitized by a blood transfusion or blood injection. This conclusion gains support from the statement that the patient is Rh positive and her husband Rh negative, a combination which rules out the possibility of Rh sensitization, because this can occur only in the reverse combination. There is always the remote possibility of A-B, Hr or some other sensitization. These remote possibilities can be ruled out with certainty only by performing complete grouping, Rh and Hr tests on the patient and her husband, and then testing the patient's serum for its antibody content by the agglutination and conglutination technics (Wiener, A. S.: Rh Factors in Clinical Medicine, *J. Lab. & Clin. Med.* **30**:957 [Nov.] 1945). In cases in which isoimmunization in pregnancy is the cause of a stillbirth there is at present no known method of preventing the recurrence of such a stillbirth by any special treatment during a succeeding pregnancy.

In cases in which a stillbirth is due to isoimmunization in pregnancy the prognosis for future pregnancies depends on the blood type of the husband (homozygous or heterozygous) and the antibody content of the patient's serum. The prognosis in the case under discussion will depend on the cause of the stillbirth during the first pregnancy. If the first pregnancy was due to a constitutional disease such as diabetes or syphilis, then another stillbirth is likely unless proper and vigorous treatment is instituted early in pregnancy. On the other hand, if some accidental factor such as a short umbilical cord or a knotted cord, or a premature separation of the placenta was the reason for the stillbirth, another stillbirth is improbable.

ABNORMAL NOCTURNAL DIURESIS

To the Editor:—A man aged 51 has been troubled "as long as he can remember" with the necessity of getting up at night to pass the major portion of his urinary output for the twenty-four hours. He is an active person, participating in active sports to a considerable degree. He has had no complaints referable to this difficulty except that he has been informed on various routine examinations that he had an enlarged prostate that would no doubt "cause him trouble some time." On examination the prostate is somewhat enlarged and is quite firm, but it is bilaterally symmetrical and is not tender. About 60 per cent of the average day's output of 61 ounces occurs at night, as much as 60 ounces having been voided at night. An occasional period of rest in the daytime in the reclining position will cause him to void three or more times within an hour, but on arising he may not void again until night. All urinary findings at all times have been normal. The condition is somewhat aggravated by advancing age but has been unchanged, in principle, since childhood. I would appreciate any explanation of this phenomenon.

M.D., California.

ANSWER.—A history of voiding the major portion of a twenty-four hour urinary output during the night since childhood, without other evidence of organic disease, strongly suggests a functional rather than an organic disturbance. Among the various causes for an abnormally large excretion of urine during the night may be listed nephritis, diabetes insipidus, hypertension and cardiac degeneration or decompensation. Lesions in the lower urinary tract, such as prostatic enlargement with or without residual urine, and some forms of cystitis may cause predominant urinary frequency at night. All of these lesions can be excluded in this case, since they could hardly extend back to childhood without other clinical abnormalities. A habit forming type of urinary frequency is sometimes observed, but the symptoms are not usually confined to night time.

The desire to urinate is supposed to be implemented by relaxation of the bladder neck, permitting urine to reach the prostatic urethra. The fact that when this patient assumes a reclining position in a rest period during the day he finds it necessary to void three or four times within an hour and is relieved by arising would suggest the possibility of relaxation of the bladder neck when in the dorsal position so as to permit the escape of urine into the prostatic urethra. There are various lesions at the neck of the bladder which might cause such symptoms when the patient is in a reclining position. Included in this group are deformities of the bladder neck such as contraction and so-called valves. Relaxation of the prostatic urethra sometimes is observed which may be secondary to obscure lesions affecting the nerve supply of the bladder neck.

In order to determine the exact condition present, cystourethroscopy would be quite essential. It would be of interest to ascertain the presence of any residual urine. A plain roentgenogram and an excretory urogram also are indicated. In fact, in this case the exact diagnosis would hinge largely on a thorough urologic examination. If all such data are negative, the conclusion would necessarily be that the symptoms are of a functional nature, in which event the patient should be instructed to limit his fluid intake after 5 p. m.

CARCINOMA OF THE PROSTATE

To the Editor:—In April 1945 a roentgenogram accidentally disclosed osteoclastic bone metastases in the pelvis of a man aged 60. Subsequently the diagnosis of carcinoma of the prostate was made by a urologist. Since that time he has been taking 3 mg. of diethylstilbestrol daily. X-ray films in September showed no spreading of the bone lesions and regression in some of them. He is gaining weight. His red blood cell count in May was 3,300,000; it now is 4,250,000. He is working. The prostate is enlarged with an irregular surface but is rather soft. Lately there has been a slight whitish urethral discharge. A smear was negative for gonococci. The sediment of the urine shows an increased number of leukocytes but no erythrocytes. He has had a mild diabetes controlled by diet for several years. Is the treatment described adequate or would any other be advisable at this stage?

M.D., Illinois.

ANSWER.—The history given is typical of a carcinoma of the prostate gland with bone metastases to the pelvis. The results obtained by estrogenic substance are what one should expect in 60 per cent of the cases or more. The dosage given appears to be adequate but usually the tolerance dose needed, over a long period, is 2 mg. daily. However, the tendency has been lately, all over the country, to use enormous doses of diethylstilbestrol such as 15 to 20 mg. a day in divided doses. Whether or not this is advantageous no one can state at this time. If back pains or leg pains or other evidence of deep metastasis present themselves, bilateral orchiectomy may have to be tried.

HODGKIN'S DISEASE

To the Editor:—Will you please discuss the treatment of Hodgkin's disease?

M.D., New York.

ANSWER.—The treatment of choice for Hodgkin's disease is irradiation. Relatively small doses are given to the involved glands. This usually causes a regression in size of the nodes and an improvement in general well being. Irradiation is repeated when the enlarged nodes recur or when previously uninvolved nodes become involved. There comes a time when irradiation no longer causes regression of nodes and improvement in the general condition: general deterioration and fatality ensue. The usual course of Hodgkin's disease, well managed by irradiation, is three to five years, in some instances shorter, and in the occasional case palliation may obtain for ten years or even longer. According to some, when a patient is first seen presenting only one group of nodes involved, better results are secured if that group is resected and x-rays are given to the area postoperatively, also to the other nodes in the adjacent regions. If more than one large group of nodes is involved when the patient is first seen, the question of excision does not arise.

HEMOGLOBIN SOLUTION

To the Editor:—I am using a Leitz colorimeter and the company advises that the hemoglobin solution 0.1 per cent solution sodium carbonate be made up fresh every sixty days. I have been advised to obtain solution direct from the Leitz company. Would it be all right for my own druggist to make up this solution every two to four weeks? Would there be enough difference in the solutions to change the hemoglobin readings?

M.D., Minnesota.

ANSWER.—A 0.1 per cent solution of sodium carbonate correctly made by a druggist should be just as satisfactory for hemoglobin determination as one obtained from a commercial company. The sodium carbonate used should be chemically pure.

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MORRIS FISHBEIN, M.D.

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Acta chirurgica Scandinavica. Stockholm.
Acta dermato-venereologica. Stockholm.
Acta medica scandinavica. Stockholm.
Acta radiologica. Stockholm.
American Heart Journal. St. Louis.
American Journal of Clinical Pathology. Baltimore.
American Journal of Digestive Diseases. Fort Wayne, Ind.
*American Journal of Diseases of Children. A. M. A., Chicago.
American Journal of Hygiene. Baltimore.
American Journal of the Medical Sciences. Philadelphia.
American Journal of Obstetrics and Gynecology. St. Louis.
American Journal of Ophthalmology. Cincinnati.
American Journal of Orthodontics and Oral Surgery. St. Louis.
American Journal of Orthopsychiatry. New York.
American Journal of Pathology. Ann Arbor, Mich.
American Journal of Physiology. Baltimore.
American Journal of Psychiatry. New York.
American Journal of Public Health. New York.
American Journal of Roentgenol. and Radium Therapy. Springfield. Ill.
American Journal of Surgery. New York.
American Journal of Syphilis, Gonor. and Venereal Diseases. St. Louis.
American Journal of Tropical Medicine. Baltimore.
American Review of Soviet Medicine. New York.
American Review of Tuberculosis. New York.
Anesthesiology. New York.
Annales pædiatrici, Basel.
Annals of Allergy. Minneapolis.
Annals of Internal Medicine. Lancaster, Pa.
Annals of Otology. Rhinology and Laryngology. St. Louis.
Annals of the Rheumatic Diseases. London.
Annals of Surgery. Philadelphia.
Annals of Tropical Medicine and Parasitology. Liverpool.
*Archives of Dermatology and Syphilology. A. M. A., Chicago.
Archives of Disease in Childhood, London.
Archives francaises de pédiatrie, Paris
*Archives of Internal Medicine. A. M. A., Chicago.
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Archivos argentinos de enfermedades del aparato digestivo y de la nutrición. Buenos Aires.
Archivos de pediatría del Uruguay. Montevideo.
Arizona Medicine. Phoenix
Australian Journal of Experimental Biology & Medical Science. Adelaide.
Australian and New Zealand Journal Surgery. Sydney.
Boletín de la Oficina sanitaria panamericana. Washington, D. C.
Brain. London.
British Heart Journal London.
British Journal of Dermatology and Syphilis. London.
British Journal of Experimental Pathology. London.
British Journal of Industrial Medicine. London.
British Journal of Ophthalmology. London.
British Journal of Radiology. London.
British Journal of Surgery. Bristol.
British Journal of Tuberculosis. London.
British Journal of Urology. London.
British Medical Journal. London.
Bruxelles-Médical. Brussels.
Bulletin of the Johns Hopkins Hospital. *Baltimore.*
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Bulletin of the U. S. Army Medical Department. Washington, D. C.
California and Western Medicine. San Francisco.
Canadian Journal of Public Health. Toronto.
Canadian Medical Association Journal. Montreal.
Cancer Research. Baltimore.
Cardiologia. Basel.
Chinese Medical Journal. Washington, D. C.
Cincinnati Journal of Medicine. Cincinnati.
Confinia neurologica. Basel.
Connecticut State Medical Journal. Hartford.
Delaware State Medical Journal. Wilmington.
Día médico. Buenos Aires.
Diseases of Chest. Chicago
Edinburgh Medical Journal.
Endocrinology. Springfield, Ill.
Epidemiological Information Bulletin. Washington, D. C.
Experimental Medicine and Surgery. Brooklyn.
Gastroenterology. Baltimore.
Hawaii Medical Journal. Honolulu.
Hospital, Rio de Janeiro.
Illinois Medical Journal. Chicago.
Industrial Medicine. Chicago.
Irish Journal of Medical Science, Dublin.
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Journal National Malaria Society. Tallahassee, Fla.
Journal of Nervous and Mental Disease. New York.
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Journal of Neuropathology and Experimental Neurology. Baltimore.
Journal of Neurophysiology. Springfield, Ill.
Journal of Neurosurgery. Springfield, Ill.
Journal of Nutrition. Philadelphia.
Journal of Obstetrics and Gynaecology of British Empire. Manchester.
Journal of the Oklahoma State Medical Association. Oklahoma City.
Journal of Pathology and Bacteriology. Edinburgh.
Journal of Pediatrics. St. Louis.
Journal of Pharmacology and Experimental Therapeutics, Baltimore.
Journal of Physiology. Cambridge
Journal of the South Carolina Medical Association. Florence.
Journal of the Tennessee State Medical Association. Nashville.
Journal of Thoracic Surgery. St. Louis.
Journal of Urology. Baltimore.
Kentucky Medical Journal. Bowling Green.
Khirurgiya, Moscow.
Lancet. London.
Laryngoscope. St. Louis.
Medical Annals of the District of Columbia. Washington.
Medical Journal of Australia. Sydney.
Medicina. Madrid.
Medicine. Baltimore.
Military Surgeon. Washington, D. C.
Minnesota Medicine. St. Paul.
Monatsschrift für Geburtshilfe und *Gynäkologie*, Basel.
Monatsschrift für Psychiatrie and Neurologie. Basel.
Nebraska State Medical Journal. Lincoln.
New England Journal of Medicine. *Boston.*
New Orleans Medical and Surgical Journal.
New York State Journal of Medicine. New York.
New Zealand Medical Journal. Wellington.
Nordisk medicin. Gothenburg.
North Carolina Medical Journal. Winston-Salem.
Northwest Medicine. Seattle.

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Ohio State Medical Journal Columbus
Ophthalmologica Basel
Pennsylvania Medical Journal Harrisburg
Physiological Reviews Baltimore
Policlinico (sezione medica) Rome
Practica oto rhino laryngologica Basel
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Prensa Medica Argentina Buenos Aires
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Proceedings of the Staff Meetings of the Mayo Clinic Rochester Minn
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Psychosomatic Medicine Baltimore
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Quarterly Journal of Studies on Alcohol New Haven, Conn
Radiology Syracuse N Y
Review of Gastroenterology New York
Revista chilena de pediatria Santiago
Revista médica de Chile Santiago
Revista medica de Costa Rica San Jose
Revue belge des sciences medicales Louvain
Rhode Island Medical Journal Providence
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Schweizerische Zeitschrift fur Pathologie und Bakteriologie Basel
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South African Journal of Medical Sciences Johannesburg
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Surgery, Gynecology and Obstetrics Chicago
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Transactions of the Royal Society of Tropical Medicine and Hygiene London
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United States Naval Medical Bulletin Washington, D C
Urologic and Cutaneous Review West Palm Beach, Fla
Virginia Medical Monthly Richmond
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Western Journal of Surgery Obstetrics and Gynecology Portland, Ore
West Virginia Medical Journal Charleston
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Yale Journal of Biology and Medicine New Haven.

SUBJECT INDEX

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The letters used to explain in which department the matter indexed appears are as follows: "BI," Bureau of Investigation; "E," Editorial; "C," Correspondence; "OS," Organization Section; "ab," abstracts; the star (*) indicates an original article in The Journal.

This is a subject index and one should, therefore, look for the subject word, with the following exceptions: "Book Notices," "Deaths," "Medicolegal Abstracts and "Societies" are indexedunder these titles at the end of the letters "B," "D," "M," and "S." State board examinations are entered under the general heading State Board Reports, and not under the names of the individual states. Matter pertaining to the Association is indexed under "American Medical Association." The name of the author, in brackets, follows the subject entry.

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Acad —Academy
Am —American
A —Association
Coll —College
Commn —Commission
Comm —Committee
Conf —Conference
Cong —Congress
Dist —District
Div —Division
Found —Foundation
Hosp —Hospital
Indust —Industrial
Inst —Institute
Internat —International
M —Medical
Med —Medicine
Nat —National
Pharm —Pharmaceutical
Phys —Physicians
Soc —Society
Surg —Surgery
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